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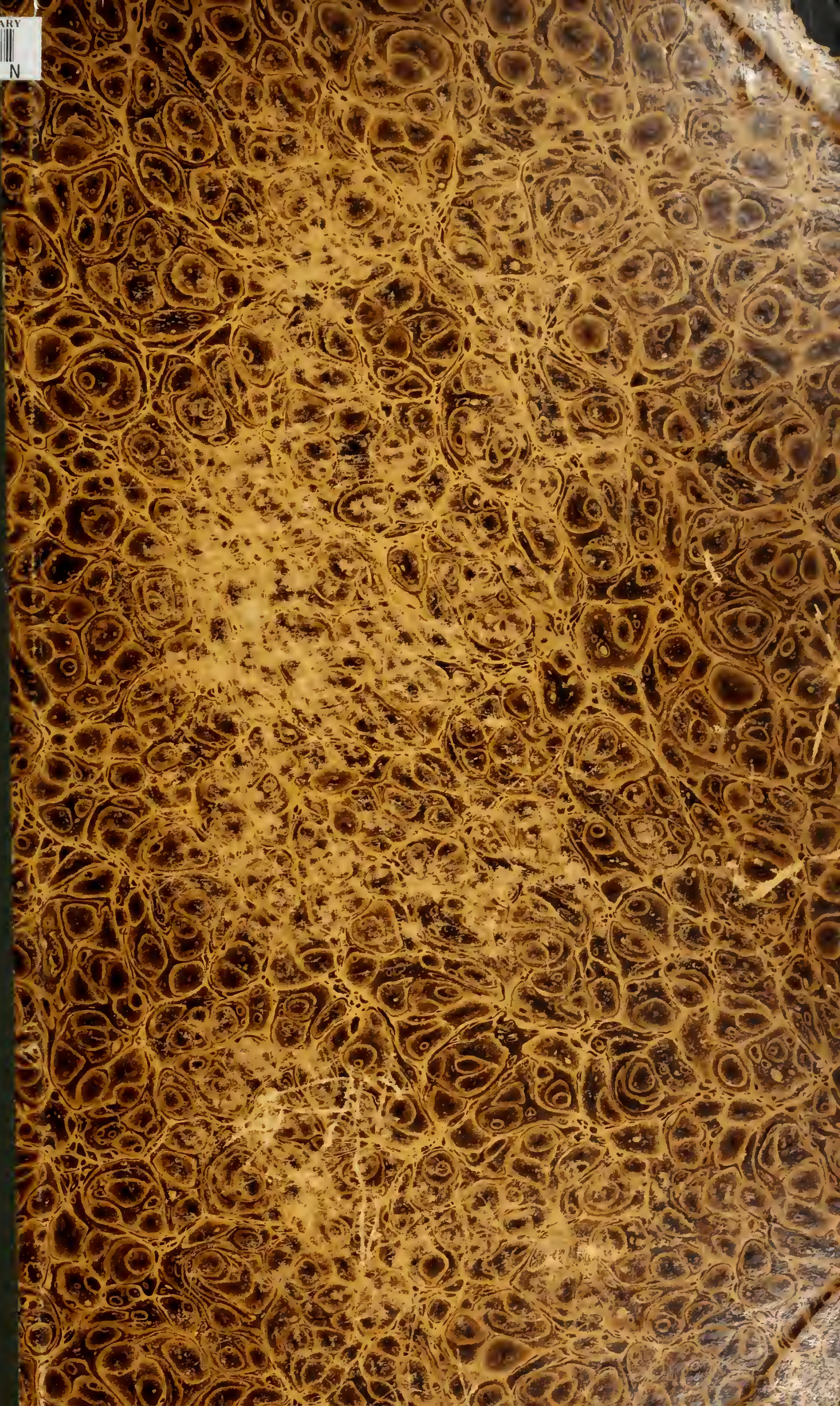

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THE
PENNSYLVANIA MEDICAL JOURNAL

REPRESENTING

THE TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

AT ITS ANNUAL SESSION HELD AT

PITTSBURGH, SEPTEMBER, 1917

-1847-

VOLUME XLVII
(VOLUME XXI OF THE JOURNAL)

CYRUS LEE STEVENS, A. M., M. D.
Editor and Publisher

Press of
The American Medical Association
1918

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THE PENNSYLVANIA MEDICAL JOURNAL
Official Organ of the Medical Society of the State of Pennsylvania

VOLUME XXI
NUMBER 1
ATHENS, PA., OCTOBER, 1917
SUBSCRIPTION: $2.00 PER YEAR

ADDRESS

PRESIDENT'S ADDRESS *

SAMUEL G. DIXON, M.D.
HARRISBURG

This year is probably to be a portentous one in the history of the medical world: one in which our society, in common with the whole medical profession in this country, will be much handicapped because of the loss from home of our men who offered their unqualified services and were accepted and sent abroad, before our home army had made known the character of the medical talent that would be necessary to keep up basic supply.

A great responsibility rests on the home army to produce and at the same time retain our ability to continue producing more than ever before those things essential for our own sustenance and to sustain the fighters at the front. This means that we must have intelligent and vigilant medical work continued in this great commonwealth of ours as well as behind the trenches.

Pennsylvania has not been rich in medical men. In fact before this cruel war was dreamed of by the masses of the civilized world, we were feeling our poverty. For several years the Department of Health has been receiving requests from communities throughout the state asking for resident physicians. Some of the letters contain statements that the writers represent intelligent rural communities with sufficient means to pay for medical service. We have not been able to supply the demand.

Today we are also suffering in our great centers of population, as well as in outlying districts, and even our medical charity work in hospitals situated near the great munition plants is suffering because its medical equipment has been curtailed by the war.

We cannot imagine what a sad thing it would be for those at the front if our munition works had to be closed for any reason whatsoever. It is our problem to see that their work is not curtailed or stopped because of epidemics of disease and insufficient medical attention. Of course, the philanthropic spirit of our medical men will not permit us to anticipate such a disaster, somehow we will prevent it, but the illustration may serve the point I wish to bring out; namely, the necessity that the military army and the home army which must furnish it the necessary supplies, must work together, and in so doing we must distribute our medical talent where it can accomplish the greatest good with the least danger to either arm of our national strength.

Up to the present time I feel that the fighting front has made application of our most precious metal where others less vital to the interests of our commonwealth could have answered the call. I do not mean to imply that this is an extreme condition, or one which may continue, but it appears certain that thus far there has not been a nice adjustment of our medical resources between the two great forces which must be equally conserved.

The powerful military organization of our government will care for those who are fighting our battles in Europe, we at home have on our hands the lives and health of our eight million citizens scattered over the forty-five thousand square miles of territory of our great commonwealth. We have found it a formidable task in time of peace, and now in time of war, with our medical forces so greatly depleted, it is plain that we must find a way to increase the efficiency of those who are left and gradually to recruit our numerical losses. These problems must be considered by the Medical Society of the State of Pennsylvania, by the State Bureau of Medical Education and Licensure, and by our great medical educational institutions. They are so essential to reinforce our medical wants that I urge you to refer the subjects to a proper committee to consider and report on a method best to accomplish the object.

It should be the special aim of this society to use its influence and its knowledge of conditions throughout the state to secure an equitable distribution between those who are to go and those who are to remain, that no district should be left entirely unprotected, and that everywhere some one who has attained prominence in our

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* Read by Dr. John B. McAlister at the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

profession might be reached as a consultant in serious need. In this work the county societies, having yet a more intimate knowledge of local conditions, should join, and the state and county should act in harmonious conjunction with those special bodies created by our President and Governor to pass on questions involving which ones should be taken.

In order that the immediate problems which confront our society may be met, and its necessary activities sustained, we certainly must have an endowment fund, or a fund perhaps with a title more liberal than that of endowment. Emergencies might demand spending from the principal as well as the interest, and, therefore, it seems to me that the power to decide on the spending of the money should be left with the proper committee of our society in charge of such work.

Perhaps we must have more government aid satisfactorily to fill the demand that is being put on us. When the poor man knocks at the door of our modernly educated physician, who, in order that he may be there and answer, must support himself and perhaps his family, he brings with him a question which will perplex the individual practitioner. The call must be answered, perhaps not only for the need of him who knocks, but the welfare of the community may be in jeopardy.

The growth of our great industries and the congestion of our population in great centers have largely increased such calls on the practitioner, and the war may add many more, so that it is a condition that demands our consideration; on the other hand, while our government may aid, it cannot provide such fees as the modern medical man is accustomed to receive from his well-to-do patients and which, as a matter of fact, the cost of his education and the standard of living which he is expected to keep up fully justify.

The young man who contemplates entering on a medical training, especially in times such as these, must not deceive himself by imagining that his path will be strewn with gold. If he has any such delusions and feels that financial success will be essential to his happiness, he had better find some other profession or business for his life work.

Our Bureau of Medical Education and Licensure might consider leaving off some of the frills of our educational requirements, at least during this time of emergency. For instance, even before the war we found very little necessity for our practicing physicians to be versed in modern languages. There was so much medical literature coming from the great educational centers of the world that trained linguists found it profitable to translate them with all their medical idioms, with the result that there is open to every physician an up-to-date library of translations far more dependable, than even with the required education in modern languages, they could possibly ever hope to have obtained by reading these various productions in their original tongues.

Our medical educational institutions might materially assist in the recruiting of embryonic medical men to fill hereafter our broken ranks by modifying our present standards for admission to the medical schools. It has always been a question with me whether or not our standard is too high. I believe we may be preventing many geniuses from entering the ranks of our profession. The elder Gross many years ago was called on to speak to the trustees of the Jefferson Medical College in regard to raising the standard for admission to that school. In his address he asked them what would have become of him had such a standard for admission as was then being considered been in vogue in his day.

If we look around over the medical and other professions, we find that those who have risen highest were not born with gold spoons in their mouths and had unlimited assistance of tutors to help them through their course in medicine, law, or whatever their chosen profession might have been, but rather men who have had the advantage and disadvantage of a practical education, seasoned with hardships and accomplished by the stress of their own determination. To many of these, like Gross, the doors of our modern institutions would be closed.

If modern medicine is to advance during the new year as it has in the recent past, it is quite possible that the government may find it necessary to form a little medical army of civil physicians to serve the general public. With the tremendous task now facing our nation, it is more than ever necessary that both our military and our industrial armies be protected from communicable disease. As a measure of preparedness this is below and at the foundation of our national endeavor.

Scientific medicine has advanced to a high standard, and now with the stimulus of necessity great achievements are possible, not only in diagnosing and treating, but also in preventing disease.

No doubt there are many other important matters which might be brought to the attention of this society, if it were not that the public mind is at the present time drawn to the one great national crisis into which we have been thrown. There is no hope that the coming year will bring us back to the ordinary interests of peace, therefore, in order that we may not be confused, feeling fully convinced that the present great issue will need all our efforts during the coming year, I leave those other matters to future presidents who may assume this honorable chair when we are no longer at war.

The society has been from early years identified with all that is noble in the history of medicine. We have fought battles for many a good cause and we have been vigorous in our prosecution of scientific investigation and education.

There is not a state which can boast of higher medical standards than Pennsylvania, and we should be proud that our membership is fulfilling the tradition of service and sacrifice, as it has done through all the years, so that Pennsylvania's contribution to the National cause along medical lines may be as significant and valuable as it has been in the past.

I am glad of having been recognized by those working with me in the same profession and hope to be able to take up my full activities in life within a very short time and exercise my humble ability to advance the interests of our society. This, however, can only be done by the cooperation of its members and with the help of the officers who have had practical experience in the duties I take up with this meeting, for they are the best judges of the character of our labors.

FAVORING PATENT MEDICINES

At a time when additional revenue is imperatively needed, why do patent medicines continue to escape a fair share of the burden? In the estimated returns from the new bill, these are credited with a contribution of only $3,000,000, while cigars, cigarets and tobacco are expected to bring in $55,000,000, fermented liquors $46,000,000, soft drinks $14,000,000 and wines $10,000,000. It is not a sufficient answer to say that these other things are luxuries; that is only partially true, at best. Nor can it be argued, on the other hand, that these patent medicines are necessities; that again is only partially true. For, although some of them serve a useful purpose, by far the greater number are injurious. They either do not cure the complaints for which they are recommended or they bring on others. It is notorious that some widely sold compounds contain a high percentage of alcohol, and that their "tonic" effect is the result of the alcohol in them, not of the other ingredients. Their large sale in "dry" territory is proof enough that they are largely used as substitutes for undisguised spirits and often do more harm. The world would be much better off if most of them were taxed out of existence.—*Philadelphia Ledger.*

ORIGINAL ARTICLES

THE PRESENT STATUS OF DRUGLESS THERAPY IN THE STATE OF PENNSYLVANIA *

JOHN M. BALDY, M.D.
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PHILADELPHIA

It is unnecessary, for the purposes of this communication, to refer to the condition of medical laws in the state of Pennsylvania prior to 1911, as it is well known that the laws were so incomplete and so inefficiently administered as to be utterly worthless for the protection of the community from incompetent service to the sick. During the session of 1911, the present medical act was placed on the statute books. In order to improve and broaden it, the act was amended during the session of 1915; and, for similar reasons, was again amended during the session of 1917. Today it stands without a peer in all the length and breadth of this land.

Under the provisions of this act, the citizens of this commonwealth during their ill health are assured of the service of properly educated physicians; and the men and women practicing the healing art are insured against unfair competition by ignorant individuals whose sole desire is to find a short and easy way of making a living, without regard to either the financial welfare or the permanent health of their victims.

While all this is true so far as pertains to the basic law, it will be true in fact only in so far as those licensed to practice the healing art perform their whole duty to their several communities, and see to it that the law is enforced. Unhappily, at the present time the various divisions of the healing art in this commonwealth have not arisen, and are not arising, to their opportunities and obligations and are falling far short as organized bodies, in their duties to their fellow citizens, who look to them as experts in the knowledge of the laws pertaining to the healing art, to see that they are protected in these matters. If the organized professions in the several communities complacently allow the existence of illegal practitioners of any kind whatever, the community may be expected to believe not only that these individuals have a legal right in these vocations, but that they have a certain amount of competency in the performance of their assumed functions. Not alone may the communities be expected to so judge; as a matter of fact, they do so assume. All of this renders the local situation not only temporarily difficult, but, after a while, permanently hopeless. There is nothing so hard to get rid of as that which has been permitted to exist and become an established fact.

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* Read at the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

The medical act of Pennsylvania requires that any and every one who wishes to practice the healing art in this commonwealth shall have acquired certain fixed and definite standards of education. In the main, the basic principles of these standards are laid down in the organic law: under that law these principles are administered by the rules and regulations adopted by the Bureau of Medical Education and Licensure. The basic principle underlying the education required, no matter what branch or form of the healing art is involved, is that there must be, up to a certain point, the same standard of education for everyone. The lines to which this point reaches are perfectly definite and sharply defined.

For instance, no one may begin to study for the practice of the healing art without having satisfied the state authorities that he or she is possessed of a certain preliminary education. This education consists, briefly, of a satisfactorily completed four years high school course plus a year of work in physics, chemistry and biology of college grade. This does not necessarily mean that the individual must have gone to college for a year; but it does mean that unless he or she has done so, the state authorities must be shown through the Bureau of Professional Education (by an examination conducted by that bureau) that he or she has the knowledge of these subjects as required.

Let me emphasize the fact that this standard applies not only to those studying old school, homeopathic or eclectic medicine, but that it applies equally well to those wishing to practice drugless therapy, in any of its branches.

The further common requirements are two years of work under competent instructors in the basic sciences underlying the practice of the healing art; viz., anatomy, physiology, chemistry, pathology, etc., those branches commonly known as the laboratory sciences. This secures the assurance that the individual has a proper foundation on which to make a correct diagnosis.

Diagnosis is the pivotal point of the whole medical act. The aim is that everyone shall be required to know all of the sciences and all of the methods necessary to insure to the afflicted individual a proper analysis of his case. It does not contemplate any interference in the way of developing therapy, but leaves everyone free to use his own judgment as to the best method of securing results.

It will be seen that this method is equitable to all concerned, both practitioners and patients, and permits of no discrimination whatever between the different schools of medicine. This is as it should be, and is the only possible way of securing to the community the benefits of all methods and of protecting its citizens from quackery.

At the time of the passage of the medical act, these principles were worked out and accepted by the three dominant schools of medicine in existence at that time: the old school, the homeopathic school, and the eclectic school. Needless to say, it was resisted by all the drugless therapy cults; and their resistance has extended to the present time.

At this point I wish to call attention to the fact that the osteopathic profession is not under the control of the medical act. During the legislative battles of the earlier years, an osteopathic act passed the legislature in 1909, and this act is still in force. In other words, the osteopaths are the only practitioners of the healing art who are not required to have the same basic educational standards as do all others. I wish, further, to point out that since 1909, the osteopathic act has been frequently amended, always in the direction of higher standards; so that today the osteopaths of Pennsylvania are nearer to the standards of the medical act than are those of any other state in the union. The last session of the legislature saw their act amended so as to increase their preliminary requirements to include work in physics, chemistry and biology. It is perfectly evident, and I think that it is beginning to dawn on the minds of the dominant osteopathic faction, that there should be a further combination of forces in Pennsylvania, and that everyone, including osteopaths, should stand on the same level of basic educational qualifications. If this can be brought about, it follows as a corollary that these standards should be controlled and enforced by a single body. In other words, the time is nearly ripe when there should be but one single governing board in medical matters in the State of Pennsylvania; and everyone should bend every effort in the direction of accomplishing this result.

Returning to the resistance of drugless therapists to the provisions of the medical act of 1911, let me recall serially the events as they have developed since the passage of that act. The Bureau of Medical Education and Licensure classifies the various cults practicing manipulative medicine under the generic term of "drugless therapy." There are quite a number of subdivisions of this class: chiropractic, neuropathy, napravit, spondylotherapy, suggestive therapeutics and others. The important ones are chiropractic and neuropathy.

The first to offer organized resistance to the administration of the bureau were the chiropractors. In order to test the strength of the medical act of 1911 and the exact rights of the state under its provisions, suit was brought, in the name of the Bureau of Medical Education and Licensure, against one, R. L. Byrd, chiropractor. Byrd had applied to the bureau for a license to practice chiropractic in this commonwealth. His qualifications, as presented by himself to the bureau, were such as to induce it to refer him to an examination, in order to test his assumed knowledge. Two trials were given him; he failed miserably in both instances, showing an absolute lack of any knowledge of the healing art, more than that of a mere masseur. Notwithstanding the rejection of his application, he continued to practice chiropractic in the borough of Meyersdale. The bureau had him arrested, and under vigorous prosecution by District Attorney Saylor of Somerset County, Byrd was convicted of practicing chiropractic without a license from the state of Pennsylvania. The opinion written by Judge William H. Ruppel ends as follows:

> At the trial the defendant made a very favorable impression, and his manner of testifying and the success he has achieved during the last few years indicated his competency and qualifications to practice in his profession; but unfortunately he appeared before the state board for examination twice and failed in both instances. He undertakes to explain—or rather his counsel for him—as to the reasons for such failure; but even if this apprehension on the part of the defendant and his counsel is correct, it cannot avail in this proceeding. Nor can we be controlled by the question as to whether the defendant was entitled to a license by reason of his having been a practicing physician for a number of years prior to the passage of the act; that is a question for solution elsewhere; our duty is simply to determine whether a chiropractor comes within the act of 1911; and, believing that the Act of Assembly applies to this branch of medical practice, we must sustain the verdict.
>
> And now (to wit, Aug. 19, 1915) the motions for arrest of judgment and for a new trial are overruled and dismissed.

Shortly after the conviction of Byrd and his appeal for a new trial, a similar prosecution was begun against one, Guy Clapper, in the County of Erie. Clapper was indicted Nov. 10, 1915, under the act of June, 1911. The charges in the case were the same as those in the case of Byrd, viz., that he was practicing chiropractic in Pennsylvania without a license from the state, and that this was a violation of the law. Clapper was acquitted of the charges on the ground that the evidence produced against him as practicing chiropractic was not sufficient; but the constitutionality of the medical act was incidentally upheld by the court in his charge to the jury, and the fact that the practice of chiropractic was controlled by the medical act was also upheld. In order to emphasize this point, the following quotation from Judge Benson's charge is submitted:

> In the light reflected by the opinion of Ruppel, P. J., Commonwealth vs. Byrd, 49 District Reports, p. 1031, we are of the opinion that the act is intended to apply to chiropractic generally; but the difficulty that confronts us here is that the evidence is insufficient to bring the defendant within inhibition of the act, for the evidence does not disclose that the defendant was guilty of any prohibited practice or that he did anything more than an ordinary bath-rubber would do—and it would not be contended that the ordinary and popular understanding of the word "surgery" would apply to the operation of a Turkish bath rubber. In view of the opinion above referred to (49 District Report, p. 1031), it would appear that the act is constitutional; and that where the evidence discloses the practice of what is known as chiropractic without a license from the State Board of Medical Education and Licensure, such practice comes within the prohibition of the said act. But we are of the opinion that the evidence here is insufficient to bring the defendant within the act; and that, therefore, the judgment should be arrested and the defendant discharged; and it is so ordered.

It will be seen that the Court of Quarter Sessions of both Erie and Somerset counties uphold the constitutionality of the medical act of 1911, and, further, uphold the contention of the Bureau of Medical Education and Licensure that under the provisions of this act, individuals attempting to practice chiropractic must first obtain a license through the bureau.

The Byrd case was appealed to the Superior Court in the April term, 1916; and the opinions of the lower court were fully sustained. The following quotations from the opinion of Judge Orlady are of particular importance as they emphasize the fact that the practice of *all forms* of drugless therapy are controlled by this act:

> The material facts in the case are not in dispute: The defendant is not in any exempted class mentioned, and his personal examination in the trial clearly

brings him within the prohibition of this act and its supplement of July 25, 1913. For the past seven years, he has maintained offices in Somerset, Berlin and Meyersdale, in Somerset County, where, on specified days, he holds out to the public his notice of professional occupation by a sign on his office window, namely, "Dr. R. L. Byrd, Chiropractic." He invites persons suffering from disease to consult him, and promises to relieve them; he treats persons and charges fees therefor, to those who come to him in suffering and physical distress. He defines the abnormal conditions . . . and seeks to mitigate them by a certain thrust that the chiropractics use; he seeks to ascertain the cause of disease by a physical examination . . .

The defense now is that he does not diagnose or treat disease as such, or practice medicine or surgery as understood by the schools. The methods he applies to ascertain the cause of physical trouble by manipulations, pressure and heat so as to fix the location of an impinged nerve, and by thrust, handling and by manual treatment to relieve the deranged organ or section of the spinal column, is simply an ingenious play on words, without any substantial difference in meaning from ordinary diagnosis and treatment of disease. The practice of medicine and surgery as used by the legislature is intended to comprehend *all the branches of the healing art,* excepting where especially mentioned. The line of demarcation between medicine and surgery was never clearly defined, and there is a library of discussion in relation to the subject. The modern thought is universally accepted, that within the realm of the two is to be found the ascertainment of the cause and treatment of all physical ills; and the tests required by Section 6 of the act of 1911 are intended to assure thorough, careful examination of applicants for the license and to demonstrate the professional qualifications and fitness of the licensed party to "practice medicine and surgery, or special branches of medicine and surgery, as recognized by the people at large." Expert opinion is not necessary to determine this phase of the question.

The meaning of the word "surgery" as understood by the masses, is equally comprehensive, and is understood to include the diagnosis and treatment, by instruments, operations or methods, of abnormal physical conditions, whether affecting external or internal parts. The subject-matter in the minds of the legislators in passing the act was to protect the people from practitioners of medicine and surgery who were without scientific training, and to allow only reputable physicians from a regular reputable school to practice medicine and surgery—with an exception in favor of those already long engaged in the practice. Until these acts were passed, there were no such stringent requirements established by law for the practice of medicine and surgery in this state; and it cannot be questioned that it was a proper subject for legislative direction. The health and safety of society would be maintained in no other manner. To allow incompetent and unqualified persons to administer or apply medicinal agents or to perform surgical operations and treatments, would be a danger to the health, as well as the lives, of persons who submitted themselves to such practitioners.

It must be conceded that no profession requires more careful preparation than by one who holds himself out "as a practitioner, or who assumes the title of doctor, or to diagnose and treat disease." It has to deal with subtle and mysterious influences, upon which the life and health depend, and requires a knowledge not only of normal health and the complicated relations of the parts of the human body, but as well the scientific training to properly detect the presence of disease and prescribe appropriate remedies therefor. Reliance must be placed on the assurances given by the licensing body of his qualifications, his learning and skill; and, on the defendant's own testimony, he was attempting to gain the benefits of such a license without possessing the qualifications fixed by law.

The statutory requirements of recent years have been deemed necessary to protect the public from imposition and fraudulent practice, and have resulted in subdivisions into departments by pretentious specialists, so as to evade the statutory requirements of general professional qualifications. Newly coined words are used to represent a particular branch of medicine or surgery, or a departure from regular methods and practices. In most instances, they are deceptive and artful, devised to impose on the public and to increase the necessity for statutory regulation.

The legislative intent is clear; and when one advertises to the world that he is practicing a professional occupation through the well-known title of "Doctor," claiming to be a graduate of a school or college, seeking patients and charging fees for professional services, there can be but one inducement moving him, namely, to have the public believe he is skilled and experienced in relieving disordered and abnormal conditions. It is to prevent incompetent practitioners and charlatans from imposing on a credulous public by such a holding out that these acts were passed; and from his own testimony, he has clearly violated the provisions of the law.

The judgment is affirmed, the record remitted to the court below that the sentence imposed shall be executed.

This case was subsequently appealed to the Supreme Court of the State of Pennsylvania, with the result that the Supreme Court refused to entertain the appeal, thus making the decision final and absolute.

The neuropaths of Pennsylvania assumed the position that although chiropractic had been pronounced as amenable to the provisions of the medical act, neuropathy was not; and some of them continued to practice neuropathy without a license. The bureau arrested one, John A. Seibert, neuropath, and accused him of practicing neuropathy in the City of Philadelphia without a state license, and, by so doing, that he was violating the law. The case came to trial in the Court of Quarter Sessions, November session of 1916, and Seibert was convicted. The opinion of Judge Martin, in refusing an arrest of judgment, fully and thoroughly upholds the position taken by the courts of Erie and Somerset in the case of chiropractic. The final words of his lengthy and comprehensive opinion were as follows:

Although the system of special licensure had been established and, by the rules of the Bureau of Medical Education, adopted under authority of the law, defendant could have obtained a license if, upon examination, he was shown to have a proper degree of knowledge of his subject and to be worthy of registration and state licensure; he made no application for a license, but practiced without a license, contrary to the Act of Assembly.

The motion for arrest of judgment is overruled and judgment is entered on the verdict.

This case has been again before the court, and a new trial refused. It is, at this time, in the Superior Court for final judgment. After the opinion of Judge Orlady already quoted, there can be little doubt as to the result.

Thus it will be seen that, by systematic and continuing action, the state has been able to establish fully the constitutionality of the medical act of 1911; and, further, to establish the fact that any and all branches of the healing art, excepting those specifically exempted in the act, namely, pharmacy, dentistry and osteopathy, are fully regulated and controlled by its provisions.

A careful study of the control established by the Bureau of Medical Education and Licensure will indicate that this is comprehensive and eminently fair to the professors of every branch of the healing art. What is asked of all is that, up to a certain point (that point being the possession of proper knowledge for making a correct diagnosis) everyone be required to produce evidence of the same qualifications. From this point, the determination of the qualifications of any individual for licensure is based on the principles of his own method of cure. Only by such requirements can the community be protected in its rights to competent service. It must be perfectly evident to anyone, lay or professional, that no man can treat a disease correctly without knowing what disease exists in the individual patient.

It will be seen, therefore, that the Bureau of Medical Education and Licensure has arisen to the full measure of its responsibilities in establishing prosecutions for the purpose of determining the rights of the commonwealth under the act, and has fully established these. There exists, consequently, no doubt, in the Commonwealth of Pennsylvania as to the legal status of all practitioners of the healing art and the methods necessary for them to adopt in securing the right to practice their professions. What remains, then, is to enforce the law. Who is to do this?

It is utterly impossible for the Bureau of Medical Education and Licensure, with the machinery and funds at its command, to prosecute all violators of the act in every part of the state. It would seem that it has done its full duty in establishing the procedure by which sure conviction can be accomplished. Constantly there comes to the bureau complaint that certain individuals are practicing illegally in certain communities; with the demand that the bureau investigate the matter and put a stop to it. The opinion is prevalent in the medical profession that it is the duty of the bureau to make such investigations and conduct such prosecutions. Possibly, theoretically, this might be an ideal situation; but it is perfectly obvious that, in order to accomplish this, it would be necessary that the bureau be composed of full-time members, adequately compensated for their services, and it would be further necessary that the bureau have sufficient funds appropriated to it to permit of its carrying out this purpose. None of these conditions exists; and whatever may theoretically be ideal, practically the bureau has gone to the limit of its possibilities — and beyond it.

It would appear as evident that, in a democracy like our own, the enforcement of the various laws is largely up to the individual citizen or individual group of citizens. Whether ideal or not, this is practically the fact. Our government, national and state (especially state), does not largely concern itself with the instituting of detailed prosecutions. It has provided the machinery whereby such prosecutions may be instituted when complaint is made by the individual citizen. For many years the medical profession had no opportunity to act successfully in this matter, and no basic law by which it could do so; and many prosecutions were begun and lost in the past because of this fact. Today, as I have indicated, there exists on the statute books a competent Act of Assembly, the powers of which have been fully tested in the courts; and any prosecution brought under this act in future will be certain of results, provided that the prosecution be intelligently conducted. In this connection, I would refer to the case of Guy Clapper of Erie County (already quoted), lost because of the presentation of incompetent evidence. In other words, those responsible for the institution of that prosecution failed to produce before the court proper evidence as to the essential facts; and it was as an illustration of this that I quoted the opinion and the result in that case.

Is the medical profession of Pennsylvania doing its duty in this matter? Is it not the duty of every county society to have its legal committee and its paid legal counsel, for the purpose of keeping its community clear of charlatans and illegal practitioners of all kinds? And is it not the duty of this state society to foster and encourage activity of this sort in its various component county societies, both by advice and by financial aid? Prosecutions in selected cases have been brought in various portions of the state by county societies, with the result that the counties have been made comparatively clean in this respect, and the communities secured the protection they had a right to expect from their licensed practitioners. This is notably so in Lancaster County, which has retained its own private attorney, who prepared a list of presumed irregular practitioners in the county and submitted the list to the bureau for scrutiny and information as to whether those listed were licensed or not; and then under the sanction and advice of the bureau swept their house clean. Under date of September 11, I have on my desk a letter from District Attorney Huss of Greene County, stating that he has just secured the conviction of one, Bebout, chiropractor, for practicing without the state license in Waynesburg. These instances show what can be done by the action of the local physicians. The physicians in Waynesburg were communicated with in regard to Bebout, after complaint had reached the bureau that he was practicing illegally. They were urged to take the matter up, consult the district attorney, furnish him with the proper evidence, and prosecute the case — the result being the conviction aforesaid.

As the dominant element in medicine, the old school is the nucleus for the prosecution of these cases. Each county society should take the matter up at once, and establish its own legal committee. This committee should invite the cooperation of each and every licensed practitioner in its community of every branch of the healing art. An investigation should be made as to the right of every man and woman in the community to practice the healing art. This list may readily be submitted to the Bureau of Medical Education and Licensure; and if there be any doubt whether or not the individuals whose names are on the list are licensed the facts can easily be ascertained through the bureau. Clear evidence should then be collected as to the fact that the individual encourages patients to come to him, that he sees these patients, makes an examination of them, and makes a diagnosis of the trouble. This is the keynote of the guilt — the making of the diagnosis. The next important and essential point of testimony to be produced is the fact that he advises and applies treatment of any kind following the diagnosis and takes compensation for this. This is the practice of medicine; and it is this that is prohibited by the medical act. This evidence should then be submitted to the district attorney of the county, and prosecution should be instituted.

The experience of the bureau has been that it is rare to find a district attorney who declines to do his duty. In some cases, however, politics enters and for this reason it is well that each county should have its own private counsel, who may conduct these prosecutions, if there is any suspicion of the sincerity of the incumbent of the district attorney's office.

The cost necessary for the production of testimony should be so small as to be negligible. Physicians of any county ought themselves readily to be able to produce this evidence. The cost of the prosecution and the fees of the attorney should be provided for from the treasury of the society, supplemented by assessments collected from each licensed practitioner of other branches of the profession — or from the treasury of their organizations, where such exist. It should be the policy of this state society to provide financial aid to each county society so acting.

The Bureau of Medical Education and Licensure stands ready, at any and all times, to render all the help possible in such prosecutions. It recognizes the fact that a certain amount of prejudice is aroused when local physicians institute prosecutions against so-called rivals. In consequence of this, it has been the custom of the bureau to sanction, when competent testimony has been submitted to it, the bringing of the prosecution in the name of the bureau thus making it a state matter and not a local one. The reason the bureau wishes the testimony submitted to it before giving its sanction to the use of the name of the state as the prosecutor is to protect the state from instituting any prosecution that will fall from lack of competent evidence, thereby weakening the respect of the several communities for the authority of the state; and at the same time encouraging irregulars by presumed victories in court.

I wish to emphasize the fact that the State of Pennsylvania is remarkably free from schools teaching these irregular branches. There exists in the city of Pittsburgh a school teaching chiropractic; there exists in Philadelphia a school teaching neuropathy; these are the only ones in the state. Both these schools have been conducted illegally. The law of the state, under the act of June 26, 1895, (P.L. 327), established the "College and University Council." The act provides: "All institutions of learning hereafter to be incorporated as colleges, universities or theological seminaries, with power to confer degrees in art, pure or applied science, philosophy, literature, law, medicine and theology, or any of them, shall be incorporated in the manner hereinafter set forth:" etc.

Section 5 of the said act provides that no charter for such a corporation, "with power to confer degrees as aforesaid," shall be granted until the merits of the application from an educational standpoint shall be passed upon by the College and University Council. The act of April 27, 1909 (Pamphlet Laws, 206), which is an amendment of the act of June 26, 1895, provides that no institution shall be chartered with the power to confer degrees unless it has assets amounting to five hundred thousand dollars invested in buildings, apparatus and endowments for the exclusive purpose of promoting instruction; and unless the faculty consist of at least six regular professors, who devote all their time to the instruction of its college or university classes.

The College and University Council was appealed to in the case of the two institutions above mentioned as regards their right of operation: the bureau was given to understand that the College and University Council had no authority in the premises, although these schools had fulfilled none of the above quoted requirements. A reading of the law appeared to be so at variance with this position of the council that the bureau appealed to the office of the Attorney-General for an opinion in regard to the matter.

Both of these institutions claimed the right of existence and operation in this state because of the fact that they had articles of incorporation from neighboring states — notably New Jersey and Delaware. The Attorney-General, in rendering his opinion regarding this matter, states:

> Replying to your favor of the 31st inst., *in re* American College of Neuropathy and Pittsburgh College of Chiropractic, I beg to advise you that, in my judgment, a foreign corporation, even though registered in this state, has no authority to confer degrees in art, pure or applied science, philosophy, law, medicine and theology, or any of them, without complying with the provisions of the act of June 26, 1895 (Pamphlet Laws 327). As I view it, they may conduct their schools or institution within this state, if duly registered, but may not confer any of the degrees above mentioned.
>
> An examination of the charters and pamphlets accompanying your letter leads me to believe that the degrees of Doctor of Neuropathy and Doctor of Chiropractic are degrees in medicine or applied science within the contemplation of the act.

In view of this opinion, the bureau asked the Attorney-General's office to take action in regard to the matter, and both institutions were, accordingly, notified to cease conferring these degrees within the State of Pennsylvania. The Attorney-General's office has informed the bureau that in case they do not so cease, it will start *quo warranto* proceedings against both institutions. Both schools have agreed that they will obey the law.

It would seem, therefore, that it is the further duty of the medical profession to the citizens of the Commonwealth of Pennsylvania to see to it that the law is obeyed in this respect also, by investigating the date of the degree issued by either of these institutions in the case of any practitioner attempting to practice in their several communities and report the results of the investigation promptly to the Bureau of Medical Education and Licensure. In case the degree has been issued subsequent to the date of their notification and agreement the bureau will forthwith see to it that proper proceedings are taken to oust the institutions from the state. It must be perfectly obvious that without the power to confer degrees, these schools must dry up and die of their own initiative.

In conclusion, I would most strongly urge that this matter be not left longer in the domain of discussion, but that action be taken by this society at this meeting with a view of carrying out these recommendations. An opportunity will be offered to accomplish something tangible in this respect through certain motions to be presented to your House of Delegates.

2219 DeLancey Street.

"Never did I seem to make the slightest progress in any undertaking until that day when I made up my mind to this: that however little my mental ability might be, I was going to use that little ability to the greatest possible extent; that however meager my brain power, I was going to put that little power to work and compel it to do what it could.

"Since then I have concluded that one of the best things any young man can do for himself is to make and maintain a firm resolution continually to use to the utmost whatever talent he has, and to rest assured that by using what he has he is constantly acquiring more."—Edgar F. Roberts.

THE CLINICAL VALUE OF ELECTROCARDIOGRAPHY*

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INTRODUCTION

Electrocardiography is a method of modern scientific heart examination by which we may differentiate, accurately diagnose and thus more intelligently treat the various defects of the cardiac mechanism. The first American papers on electrocardiography were written in 1910; the subject has passed the stage of experiment in physiological laboratories and has become of profound significance to the clinician. It is therefore fitting that we should inquire with detail into the clinical value of this recent method of heart examination.

With the aid of the "string galvanometer," as it is sometimes called, we can now distinguish between the irregular pulse that is harmless and the irregular pulse that indicates profound cardiac damage. For example, in days past, children who presented arrhythmias have been regarded as potential heart cases, and their activities often so curtailed that proper physical development was interfered with; patients exhibiting an intermittent pulse have, in days gone by, been given guarded prognoses or perhaps refused as applicants for life insurance, and thereafter lived useful, energetic lives for twenty-five years or more. On the other hand, a slow pulse rate of fifty was regarded as a "family characteristic," and the occasional "far away" sensations of which the patient complained or the syncopal attacks which he underwent at times, were attributed to indigestion or epilepsy, with no thought of heart disease because no murmurs or gross irregularities were present. Then, too, every practitioner of experience has noticed that digitalis, markedly beneficial in some irregularities, gave alarming symptoms in others, and the profession has been at a loss to correlate such diverging observations.

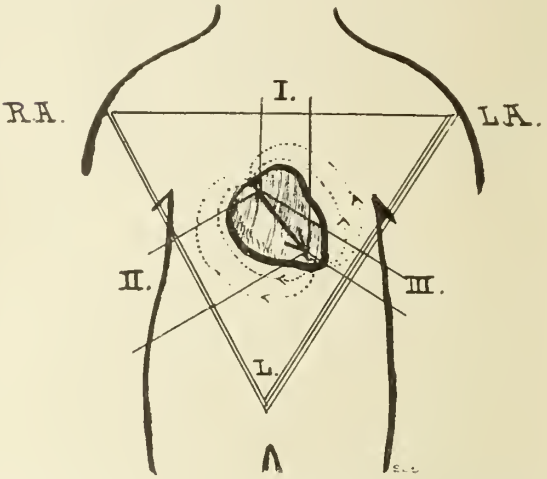

Fig. 1.—The Three Leads. The heart is represented as the center of a triangle composed of Leads I, II and III. The arrow within represents the electric axis of the heart; the dotted lines represent the direction of the contraction waves from this electric axis. In the normal heart, Lead II registers the greatest value of these contraction-waves, for the reason that it is more nearly parallel with said axis and thus reflects more of the heart's surface. Manifestly, disease of the heart muscle or enlargement of various cardiac chambers *alter the record.* Currents flowing from apex to base produce upward movements in the electrocardiographic curve; the reverse is also true.

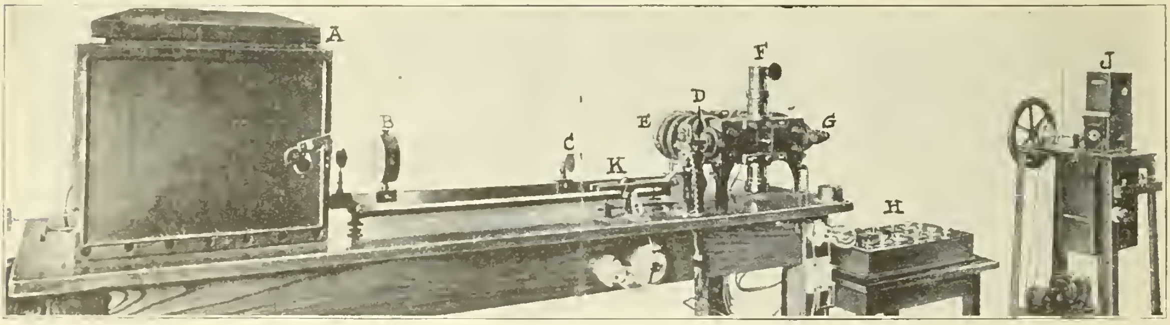

Fig. 2.—The Williams-Hindle American Electrocardiograph. *A* is the lamp-hood which encloses the Cunningham arc light; the rays then pass through the condensing chamber at *B*. *C* is a target by which the beam of light is directed on the anterior microscope *D*. *E* is the electromagnet, in the center of which is the string-housing *F*, which protects the delicate string which is actuated by heart-currents. *G* is another microscope for further magnification of the string shadow. *H* is the resistance box which controls the current passing through the string and which protects against induction currents. *J* is the camera, camera motor and 200-foot film roll. *K* is the tuning-fork which marks the abscissæ on the electrocardiogram (see Fig. 7-B).

Today, thanks to electrocardiography, these irreguliarities are classified. We understand that digitalis is beneficial in auricular fibrillation and often harmful in heart block; we know that the arrhythmias of childhood are very often due to a change in vagal control and that, in themselves, they are not pathological; we appreciate that the intermittent pulse of adults is frequently due to premature contractions and that, unless accompanied by other symptoms or growing progressively worse, it does not constitute heart disease. On the other hand, a pulse rate of fifty or less is very suggestive of heart block of some degree.

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* Read by title before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

METHOD OF EXAMINATION

An electric current is generated at each contraction of the heart. This fact was discovered by Kolliker and Muller in 1856. In 1905 Einthoven, a Dutch physiologist, devised an instrument by which these currents could be made to deflect a very fine gold-covered quartz string—so fine that the unaided eye cannot see it. This wire moves between the poles of a very powerful electric magnet, and is protected from the action of outside currents by ingenious electric contrivances. Einthoven further demonstrated that it was not necessary to expose the heart in order to register its action-currents, for they can be derived from the surface of the body by applying three "leads;" these leads form a triangle and thus correspond to the base, to the right and to the left side of the heart. (See Fig. 1.) The leads are connected to each forearm and to the left leg. The delicate currents from the heart which travel through this finely spun wire are magnified by microscopes, illuminated by an intense light and the shadow of the oscillating string is photographed on a moving photographic film. (See Figs. 2, 3 and 4.) This procedure is termed "electrocardiography;" the record thus made is an "electrocardiogram," and it is literally a message from the heart.

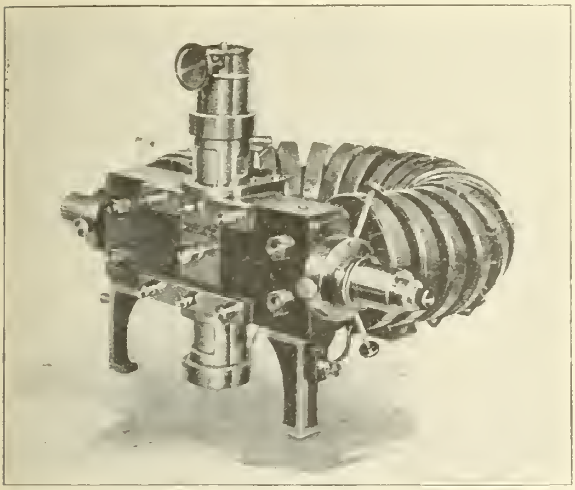

Fig. 3.—The Galvanometer and String-House at closer range, showing how ingeniously the string is protected from particles of dust. Note the rigid yet adjustable mounting of the microscopes.

THE CONDUCTION SYSTEM OF THE HEART

The electric discharge due to contraction of the heart is normally conducted along a given path. (See Fig. 5.) This pathway of conduction is along highly specialized neuromuscular tissue, only recently discovered, known as the node of Tawara and the bundle of His, with its right and left branches, the terminal and almost microscopic fibers being termed the fibers of Purkinje.

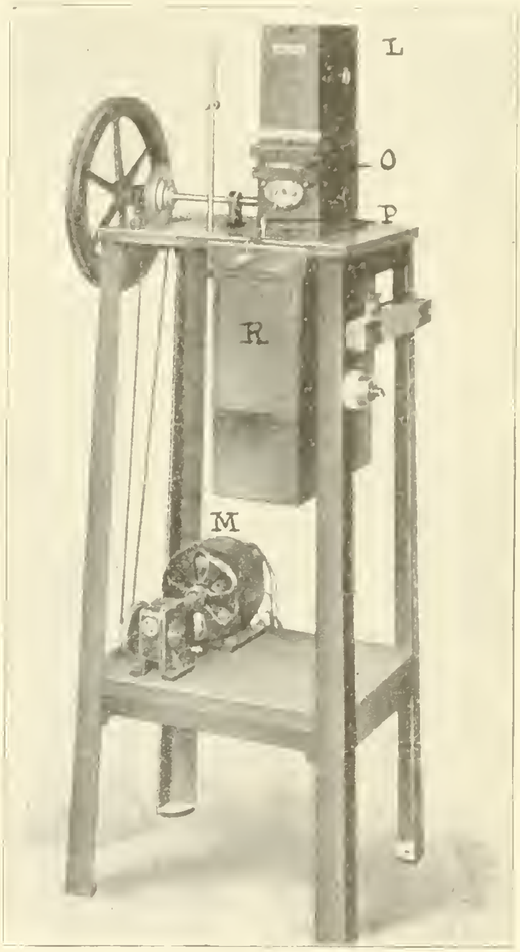

Fig. 4.—The Camera. *L* is the film-roll; the motor *M* feeds it past the camera lens *O* at a selected speed, usually at 25 R. P. M. for clinical work. *P* is a knife which cuts the completed film. *R* is a box in which the exposed film drops.

The impulse of contraction arises in the sino-auricular node, which Lewis calls the "pacemaker;" it is a vestigial remnant of the primitive embryonic cardiac tube, and is located at the junction of the superior vena cava with the right auricle. It is centrally situated so that the impulse spreads equally over the muscle fibers of the auricle (as syrup poured on a table would spread from a central point) to a "relay station" called the node of Tawara, which is located in the septum of the right auricle and ventricle. On account of this location it is sometimes called the "atrioventricular node," referred to for the sake of brevity as the *A-V* node. This node, some half inch long, terminates in the "bundle of His." The bundle then divides into two branches, the flat left branch piercing the interventricular septum to reach the left ventricle, the round right branch going to the right ventricle. The branches eventually spread out in all directions in the ventricular muscle, like the branches of a tree; these terminal arborizations are called the "fibers of Purkinje."

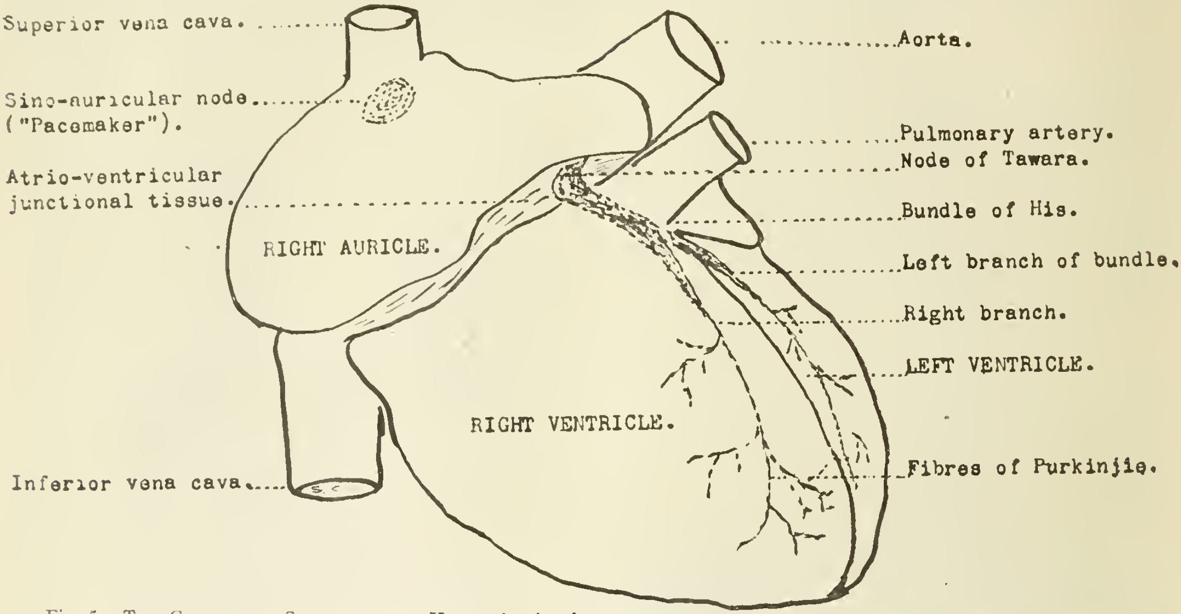

Fig. 5.—The Conduction System of the Heart showing in shadow diagram the approximate relation of the more recently discovered structures to familiar anatomical divisions of the heart.

When the electric discharge travels along the normal pathway of the heart, it writes a normal picture on the photographic film. When disease interferes with the conduction, with the rhythm or with the contracting power of the heart; when disease dilates one of the chambers, or when disease causes changes in the heart muscle, the current takes many devious pathways. Animal experiments and clinical experience have taught us to translate these deviations into terms of heart disease.

THE INVESTIGATIONS THAT ESTABLISHED ELECTROCARDIOGRAPHY

For example, the record from a normal dog's heart is quite like the record from a normal human heart; the difference amounts to practically nothing. (See Fig. 6.) In experimenting with the dog, the conduction system was interfered with at various points by pressure with forceps; it gave abnormal curves. Records similar to this were found at the bedside of patients; on necropsy in the cases it was discovered that disease had produced the same changes in the heart that had been experimentally induced in the dog. Another experiment was to produce enlargement of the various chambers in the animal heart; again we got a type of curve which had been observed at the bedside; and again did eventual necropsy establish the truth of the electrocardiogram.

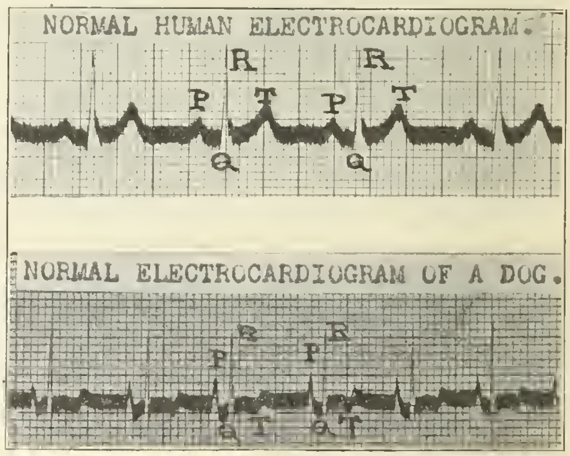

Fig. 6.—Normal Human Electrocardiogram (upper record). Normal Electrocardiogram of a Dog (lower record). Showing the close resemblance between the two and explaining the clinical value of experiments on canines in establishing the truths of electrocardiography.

It was also demonstrated that when infectious disease, such as pneumonia, changed the human records it would alter the records in a similarly diseased dog in like manner. Drugs, such as digitalis, aconite, lead, etc., were administered to canines in the laboratory; the electric curves were modified. The same alterations in the records were found in patients taking these drugs. With such credentials has electrocardiography introduced itself to the medical profession.

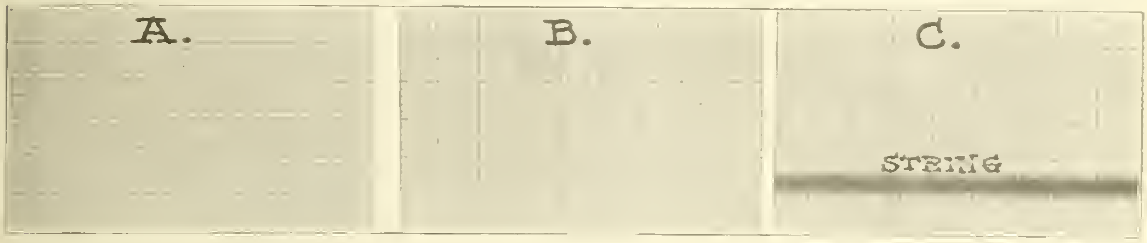

Fig. 7.—Component Parts of the Record. *A* shows the ordinates, or horizontal lines, which are engraved on the camera lens. They are used to express in millivolts the amplitude of the various waves. *B* shows the abscissæ, or vertical lines, put on the record by a time-marker; their purpose is to time the various events of the cardiac cycle. *C* shows the shadow of the string when at rest, not activated by heart currents.

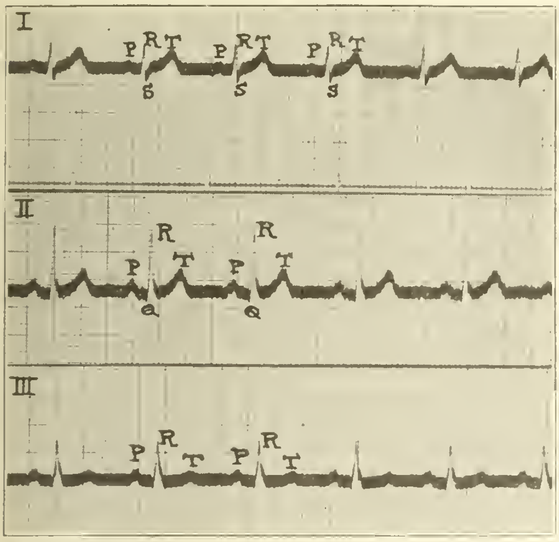

Fig. 8.—Normal Electrocardiogram. *P* is the representative of auricular contraction. *Q-R-S-T* represent the ventricular complex. The normal limits of the various waves are explained in the text. As Lead II expresses the greatest values of the individual waves, said lead will be used in the following illustrations as a normal standard for comparison.

CLINICAL DIAGNOSES CONFIRMED BY ELECTROCARDIOGRAPHY

This method of heart examination not only acquaints us with varieties of heart disease which we never knew existed before its advent, but it also confirms many diagnoses which we have been clinically accustomed to make. For example, it tells us which chamber in the heart preponderates in hypertrophy and dilatation. It frequently proves the clinical diagnosis of mitral or tricuspid stenosis; it furnishes corroborative written testimony of aortic valvular disease. It guides us in the selection of cardiac drugs; it warns us of their beginning toxic effects. It not only records the efficacy of our chosen method of treatment, thus often indicating a change of remedies, but it also signals to us the approach of danger in the over-administration of certain drugs. To illustrate, it tells us when the cardiac tolerance of digitalis has been reached before the physiological limit manifests itself. It heralds at times the approach of those diseases which affect the heart, such as rheumatic fever, before the clinical evidences of fever, joint swelling, etc., make their appearance; and, at the further extreme of an illness, graphic records often indicate the approaching end of life long before Cheyne-Stokes respiration and other classical symptoms of dissolution ensue. But perhaps most valuable of all, a series of curves taken under varying conditions of rest and exercise, may afford us the best evidence obtainable of the functional activity of the all essential heart muscle.

DIAGNOSES NOT POSSIBLE BY USUAL CLINICAL METHODS

Electrocardiography does more than confirm diagnoses at which we have clinically arrived; it gives us information concerning irregularities of the heart which it is not possible otherwise to obtain, among which are sinus arrhythmia, premature contractions, paroxysmal tachycardia, bradycardia, auricular fibrillation, auricular flutter, ventricular flutter, heart block, etc.

These conditions can be better illustrated than described. Let us first consider the normal electrocardiogram, and then study the departures from this normal condition which are induced by disease, remembering that disease changes the normal waves of the electrocardiogram in sequence, in amplitude, in direction and in duration.

HOW TO READ THE NORMAL ELECTROCARDIOGRAM

The electrocardiogram is composed of three leads, expressed in Roman numerals. In Lead I the electrodes, which are simply pieces of german silver curved to fit the limb and held in place with bandages soaked in hot salt solution, are connected to the right and left arms of the patient. Insulated wire carries the current to the string galvanometer. Lead II registers the electric potential of that part of the heart which comes nearest to a line drawn from right arm to left leg; Lead III is from left arm to left leg.

The fine horizontal screen lines (see Fig. 7-A) are called "ordinates;" they are drawn on the lens of the camera and are used to measure the height of the individual waves, each being equal to 10^4 millivolts. The vertical screen lines (see Fig. 7-B) are called "abscissæ;" they are photographed on the record as shadows of a rapidly revolving wheel, operated by a tuning fork, called a timemarker. They are used to time the events of the cardiac cycle, each division representing 0.04 second.

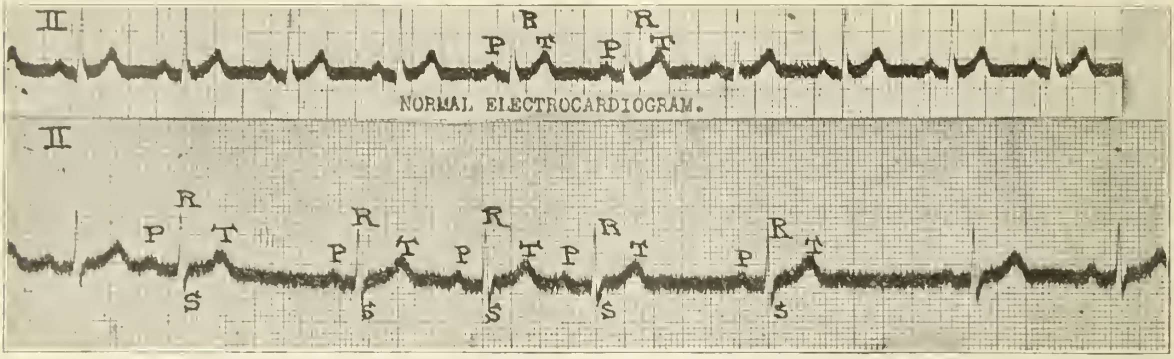

Fig. 9.—Sinus Arrhythmia. This curve strikingly illustrates the variations in rate which characterize the "youthful type" of cardiac irregularity. The sequence of events is a normal *P-R-S-T* complex, but the rate varies with each contraction.

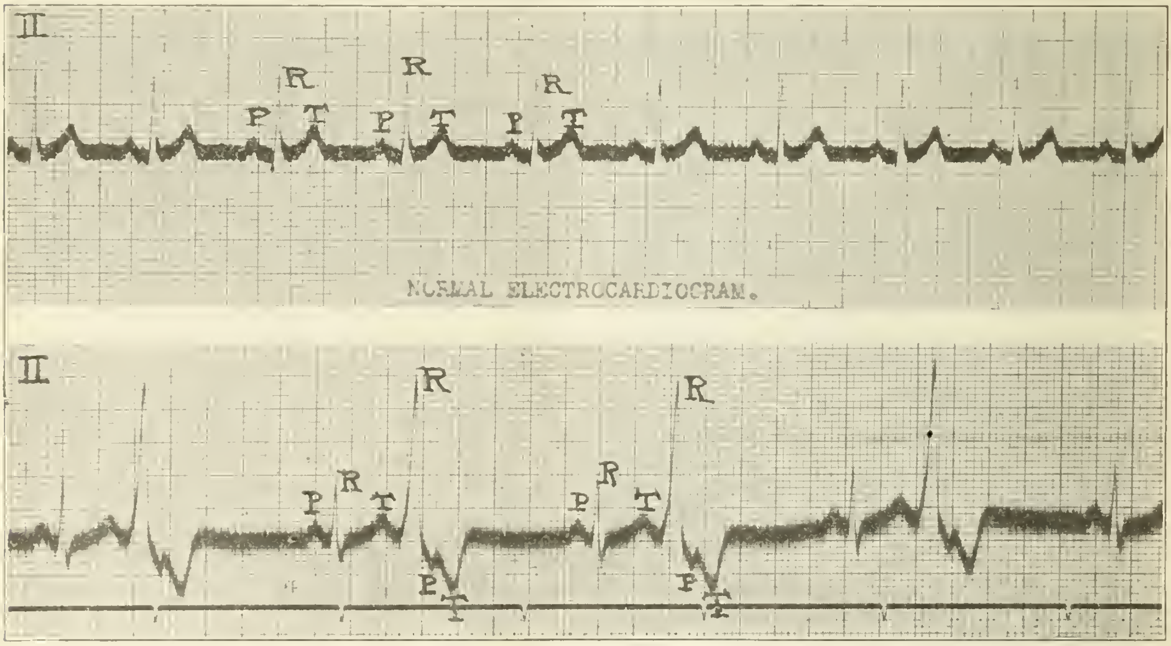

Fig. 10.—Right Ventricular Premature Contractions which produced a bigeminal pulse. The premature contractions in this instance are identified by the tall *R* spikes which follow closely on the preceding *T* wave, during what should be the diastolic period of the heart.

Figure 7-C shows the shadow of the string when it is at rest, not activated by heart currents.

THE SYMBOLS OF THE ELECTROCARDIOGRAM

Einthoven applied certain symbols (purely arbitrary, with no interpretation to be put on the letters, as would be the case if he had chosen "a" to represent auricular contraction, "v" for ventricular contraction, "d" for diastole, etc.) to the various peaks, elevations and depressions of the electrocardiogram. Thus, the representative of auricular contraction is called the *"P"* wave. (See Fig. 8.) It is a small, blunt-pointed or rounded elevation, not normally over 2 mm. high nor over 0.02 sec. wide, and is directed upward. The time taken for the passage of the impulse from auricle to ventricle is called the *"P-R"* interval; it is measured from where *P* leaves the base line to where *R* begins, and normally occupies from 0.12 to 0.18 second; over 0.2 second indicates a delay in conduction.

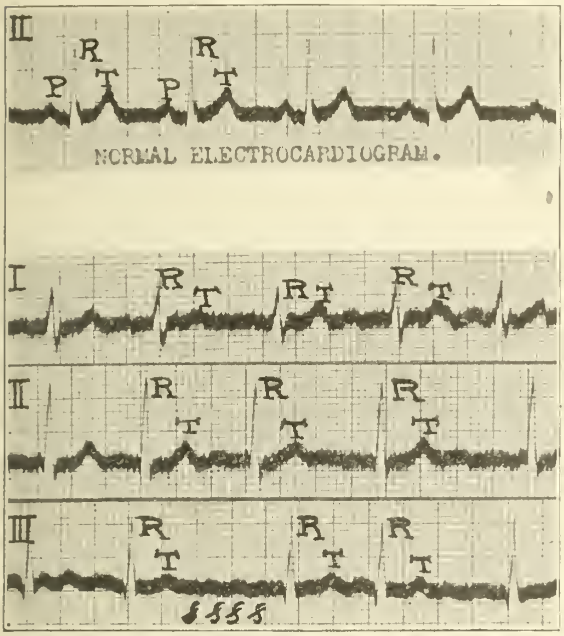

Fig. 11.—Auricular Fibrillation. The *P* wave, the representative of auricular contraction, is absent in all three leads. Fine fibrillary ("f") waves fill diastole in Lead III. Note the absolute irregularity of ventricular contraction, as expressed in the uneven spacing of the *R* wave.

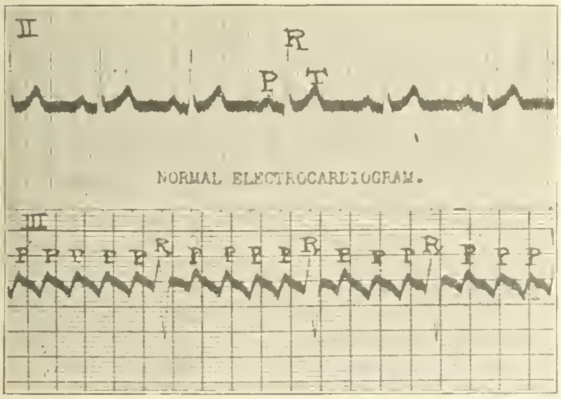
II
R
P
T
NORMAL ELECTROCARDIOGRAM.
III
P P P P P R P P P P R P P P R P P P

Fig. 12.—Auricular Flutter. The auricles are contracting at an averaged rate of 270 times per minute. The ventricular rate averages 60 per minute. The impossibility of arriving at a clinical diagnosis under such circumstances is quite apparent. Graphic records such as this, however, clearly establish the diagnosis and thus point the way to efficient treatment.

The *Q-R-S-T* denote ventricular contraction. *Q* is the first evidence of activity at the apex of the ventricle; it is directed downward, usually not over 2 mm., and may be entirely lacking, being submerged by stronger contraction waves. The *R* wave is due to the action of the basal portions of both ventricles; it is directed sharply upward in all three leads, and in Lead II registers its greatest normal amplitude of from 10 to 20 mm. (Normally, the values of all waves of Lead II equal the combined values of Leads I and III.) The first sound of the heart begins as *R* approaches its zenith. The *S* wave is a sharp peak, directed downward 5 or 6 mm., and is due to activity at the apical portions of the ventricles; it, too, may also be lacking, also less often so than *Q*.

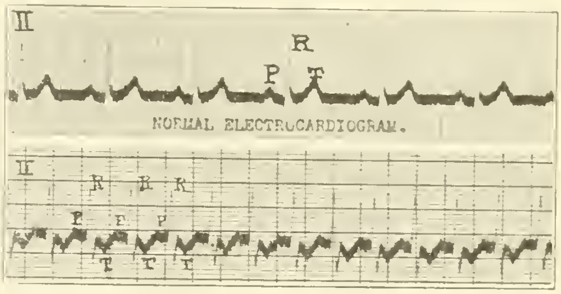

Fig. 13.—Paroxysmal Tachycardia. The ventricles respond to each auricular impulse, both chambers contracting at the rate of 210 per minute.

The slowly rising *T* wave represents the final activity of the ventricles and has its origin, it is believed, at the basal portion of the ventricles near the great vessels. *T*, as will be noticed, returns to the base line much more sharply than it left it. It is normally directed upward ("positive") in all three leads, although it may occasionally be directed downward ("negative")

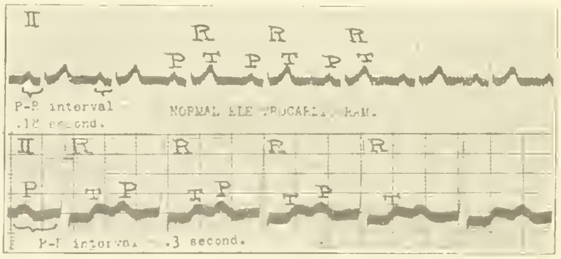

Fig. 14.—Delayed Conduction.—The impulse for contraction is transmitted from the auricle to the ventricle over the Node of Tawara and the bundle of His. In the normal heart this transmission occupies 0.18 second. In the lower figure conduction is delayed to 0.3 second. Delayed conduction may often be the forerunner of eventual heart block; hence, such patients require frequent graphic study and appropriate treatment.

in Lead III, in which lead it is often quite small. Exercise increases the size of the *T* wave; the second heart sound occurs synchronously with the end of *T*. From *T* to *P* is the diastolic period of the heart.

THE ABNORMAL ELECTROCARDIOGRAM

Let us now consider the changes wrought in this normal record by disease, looking for departures in sequence, in amplitude, in direction or in duration of the waves, in the following illustrations (9 to 20, inclusive).

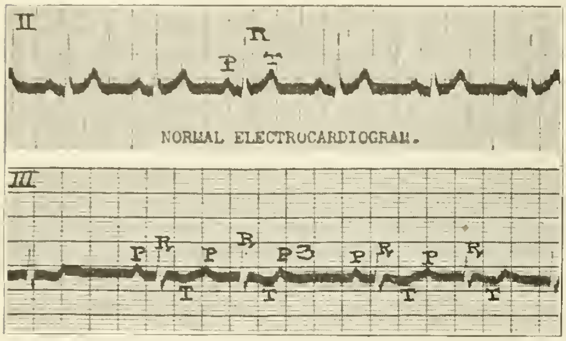

Fig. 15.—Dropped Beat. In the second curve it will be noticed that *P*-3 is not followed by a ventricular contraction. Dropped beat is in reality a low-grade heart-block, and is not to be confused, as is frequently done clinically, with ventricular premature contractions which fail to reach the wrist.

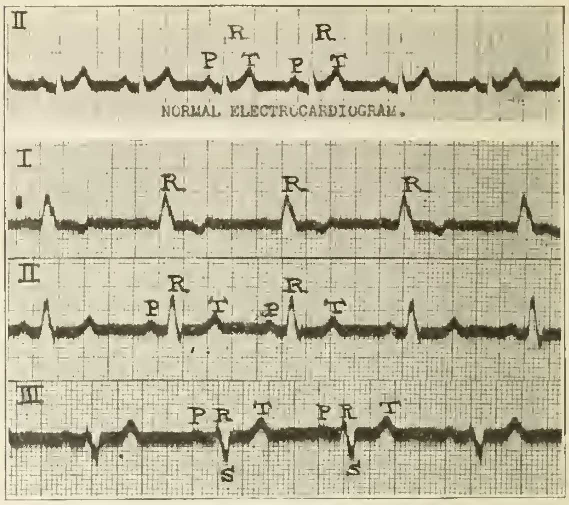

Fig. 16.—Right Bundle Branch Block. The time which elapses from the point where *R* leaves the base-line in Lead I until it returns to the base-line, plus the width of the *R-S* deflection in Lead III, are characteristic of block in the right branch of the bundle of His.

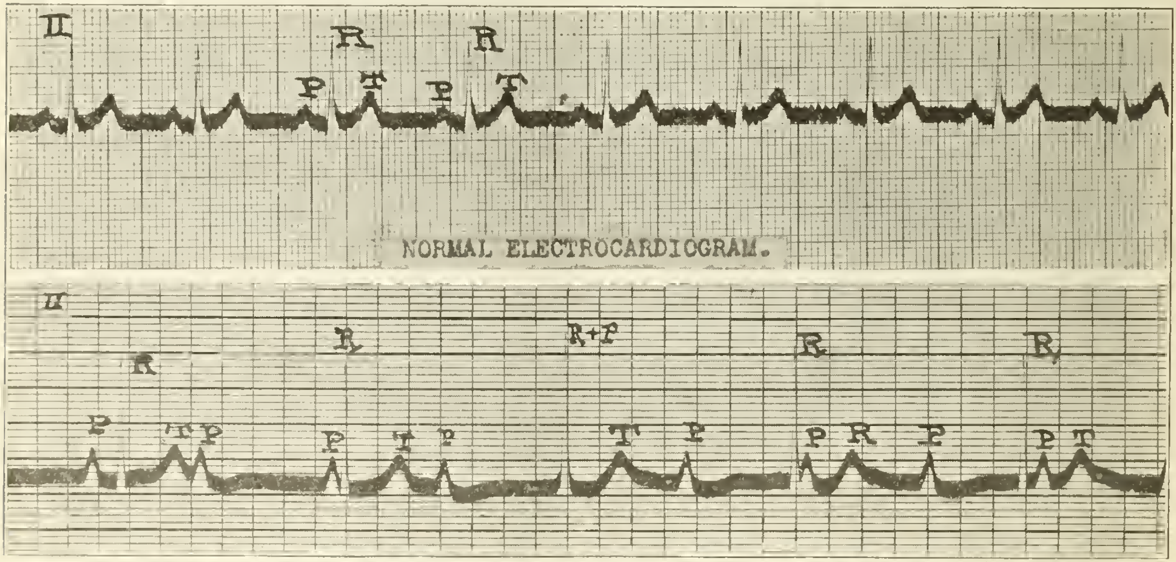

Fig. 17.—High-Grade Heart-Block. There is complete dissociation of the auricles and ventricles; while each contracts quite regularly, yet one is absolutely independent of the other. The auricular rate is 90, the ventricular 50 per minute.

FUTURE OF ELECTROCARDIOGRAPHY

Electrocardiography promises much to the profession by its future devolpments. Few, indeed, are the drugs which are known to exert any direct influence on the heart; many of our time-honored cardiac stimulants and cardiac sedatives have been proven to be utterly without heart effect. The practitioner of the present day cannot risk either patient or reputation in the administration of remedies whose alleged action is based on tradition alone. Electrocardiography is ferreting out those remedies in the pharmacopoeia which are dependable—and thus will the cardiac therapy of the future be enriched by this instrument of scientific precision.

THE EARLY RECOGNITION AND PROPHYLAXIS OF HEART DISEASE

Even with the keen interest which electrocardiography has already awakened in the professional mind, there is one phase of tremendous future value which has not yet been dwelt on nor is its significance fully appreciated. That phase is the early recognition of heart disease. Myocardial degenerations, irregularities of the heart beat and frank valvular disease do not develop in a day nor in a week; they are progressively developing steps in heart disease which had its inception at an earlier period; probably during the course of the acute infections of childhood and adolescence; possibly during febrile and infectious processes of adult life. It is certain that months or years usually elapse before gross and fully developed heart lesions are announced by the obvious cardiac distress, murmurs, thrills, swellings, dyspnea, congestions, exhaustive effort, etc., on which has heretofore rested the classical diagnosis of heart disease.

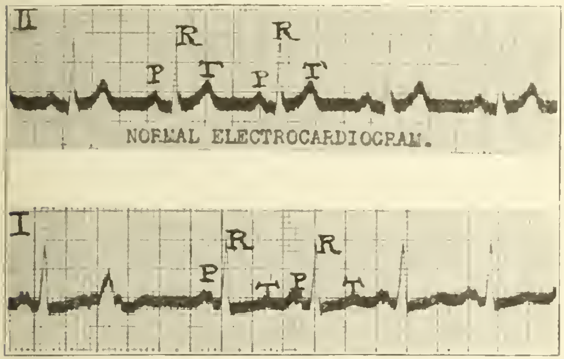

Fig. 18.—Mitral Stenosis. The "Split *P* summit" revealed in this curve confirmed the clinical findings of presystolic murmur, snappy first sound and thrill.

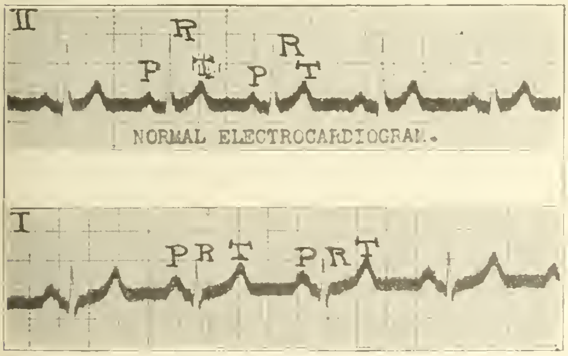

Fig. 19.—Auricular Hypertrophy. A casual glance at the above records might suggest that they are from the same patient. A little careful inspection, however, will show that the lower record presents a *P* wave which transcends the normal limits and which indicates auricular hypertrophy.

Our early professional recognition of tuberculous processes is lengthening life; the early diagnosis of cancer is sparing our patients many anguishing deaths. Likewise does the early recognition of cardiac affections give hope of removing heart disease from its present appalling first place in the statistics of death. This professional advance can be readily accomplished by more universal electrocardiographic study during the course of acute infections, supplemented by similar examinations at frequent intervals during convalescence and for a warranted period thereafter. By such means we can definitely recognize the early appearance of heart disease, and can then call to our aid the preventive and therapeutic measures of physical rest, mental rest, dietetics, hygiene, elimination, graduated exercise, balneotherapy, drugs, etc., and thus prevent a simple cardiac defect from developing progressively into the gross endocardial changes and myocardial degenerations of later life.

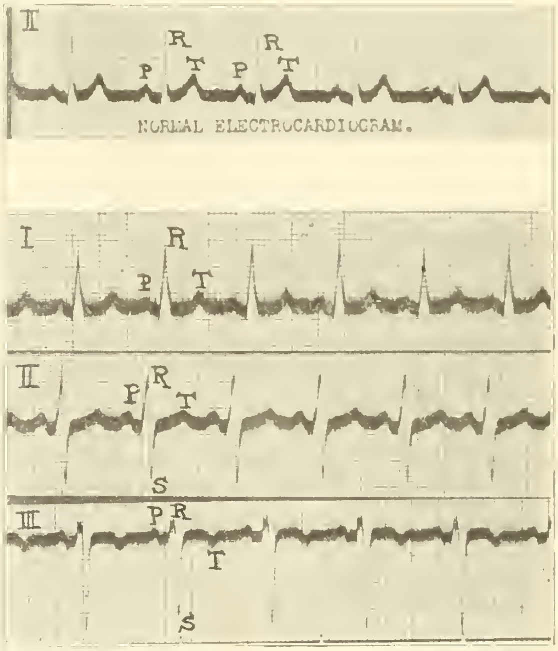

Fig. 20.—Left Ventricular Preponderance in Aortic Regurgitation. In estimating ventricular preponderance Leads I and III are used for comparison. Note tall *R* in Lead I and the deep *S* in Lead III.

THE ADAPTATION OF ELECTROCARDIOGRAPHY

It may be asserted that electrocardiography is at present available only to those patients who are in the larger hospitals and cities of the country where the instruments are located. This is true, but the assertion constitutes no criticism of electrocardiography; nor can it yet be construed as a criticism of the physicians of the smaller medical communities. With the growing appreciation of the subject, the electrocardiograph is destined soon to find its way into all those medical centers which have for their object the intelligent diagnosis and understanding treatment of heart conditions. The surgeon, too, will avail himself of graphic heart records—not only in the preoperative warning they will give of cardiac operative risks, not only in the assistance they afford in the choice of an anesthetic, but to aid in the recognition and prognosis of those postoperative arrhythmias, pneumonias, comas and other vagaries which may complicate surgical convalescence.

CONCLUSION

The searching eye of the microscope peers into the hidden causes of disease and frequently cuts short a threatened illness; urinalysis, as practiced today, searches out the altered chemistry of the body and thus indicates the insidious approach of maladies; blood examinations reveal dyscrasias which, if they be taken in time, are quite amenable to treatment; the Roentgen rays illuminate beginning bone and joint affections and penetrate with an understanding light obscure organic lesions. In a similarly exact and beneficial manner does electrocardiography present itself to the profession for the investigation and early recognition of heart disease.

Electrocardiography is not to be used to the exclusion of clinical observations; it is not intended to supplant the trained finger, the accustomed ear and the all-perceiving eye in the recognition of cardiac disease. It will verify and corroborate data thus secured; it will clear up many doubtful diagnoses. It has, further, taught us of serious heart conditions that cannot be distinctly recognized nor intelligently treated by any other means. It is to be regarded as an instrument of scientific precision that is of profound value to the medical architect who strives to create a Temple of Health from the ruins threatened by disease.

323 South Eighteenth Street.

AMERICA'S CAUSE FOR WAR

"The military masters of Germany denied us the right to be neutral. They filled our communities with vicious spies and conspirators. They sought to corrupt our citizens. * * * They sought by violence to destroy our industries and arrest our commerce. They tried to incite Mexico to take up arms against us and to draw Japan into hostile alliance with her. They impudently denied us the use of the high seas and repeatedly executed their threat that they would send to their death any of our people who ventured to approach the coasts of Europe. * * *

"This flag under which we serve would have been dishonored had we withheld our hand."—*Woodrow Wilson, President of the United States.*

A COMMENCEMENT ORATION *

D. CLINTON GUTHRIE, M.D.
PHILADELPHIA

At a dinner given to the officers of the British Army and Navy on their return from the Crimea, Lord Stratford suggested that the guests should write on a piece of paper the name of the person whose deeds in the Crimean War would engrave themselves most indelibly in the history of the British people. When the papers were examined every one had written the name of Florence Nightingale.

Many have attempted to tell what the Angel of the Crimea was to those poor suffering men, but every Crimean veteran proclaimed that no words have ever been coined to express it. "The lady of the Lamp" was the name given her by those stricken men whose sufferings she had done so much to relieve, as night after night, when many of her assistants had gone to rest, lamp in hand she passed down those six miles of hospital cots. One of the sufferers in telling the story said, "Of course she could not speak to all of us, but we could kiss her shadow as it fell on our pillows and then go to sleep in peace." Frequently she stood for twenty hours a day receiving patients and assigning them to their places. This life of self-sacrificing, unremitting service was the one chosen by a woman whose talents and position fitted her to grace the most brilliant drawing room. As a reward she won the adoration of those who owed at least their health and perhaps their lives to her; the gratitude of her nation, and the admiration of posterity. In old age, after years of hopeless suffering, brought on by her labors, she said, "I never was happy until I took up this line of work and since then I have not known an unhappy day."

Tonight, I congratulate you upon having chosen a profession that calls for the exercise of your greatest gifts of heart, head and soul and one which offers princely rewards.

I trust you have chosen it not because of sentimental or mercenary reasons, but because you believe that of all courses open to you, in this alone, you have found that for which you are peculiarly adapted; here you can attain the highest degree of efficiency; to this alone you can give your entire being.

A young woman felt called to the mission field; to leave home and friends was a great grief; for weeks and months she sought to put the idea out of her mind, but the effort was futile. Finally, she decided to enter the door that had opened, and for years in sickness and health, in joy and grief she has labored, for months at a time, in a district of six hundred thousand souls, not one white face. But always behind every disappointment and pain was the firm conviction, "This is my place here. I can, and must, work out my destiny."

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* Delivered before the graduating class of nurses of the American Stomach Hospital, May 25, 1916.

Pain of body, distress of mind may be yours, days and nights of tireless effort may be rewarded with misunderstanding and ingratitude, but if you be supported by the knowledge that you have chosen wisely, all this will sink into the background.

It has been said that the obvious is the thing most frequently overlooked; for this reason, I venture to suggest, even at the risk of being guilty of triteness, that you take as your motto, *ich-dien* (I serve).

When you began your course, three years ago, with enthusiasm, dreams, and it may be some misgivings, your mind bridged the years and in your imagination you saw yourself standing, as you stand today, carefully trained, fully equipped ready to meet whatever life had to offer. Tonight, if I could read your minds I doubt not I should find, intermingled with the joy of achievement some apprehension, and I count it a privilege to be able to offer, from my years of experience, a few suggestions that you may find useful as you begin your life work.

Allow me to remind you that there are many kinds of service, but only the best secures the highest reward. The best is many sided and the first side which we shall consider is *enthusiastic* service.

Enthusiasm is one of the greatest assets in human life. It is the steam that drives the engine up the heaviest grade, through the darkest tunnel and finally carries it triumphantly to its destination. Enthusiasm concentrates energy and lightens the burden that otherwise would be too heavy to be borne. The child rolling, tumbling and dancing as he thrills with the joy of life has no time for ennui. Life to him is a splendid adventure, every day new delights, though the dull-eyed onlooker sees only the same old games.

It has been said, "Except ye become as little children ye shall in nowise inherit the Kingdom of Heaven." Unless we can bring the wholeheartedness, the enthusiasm to our work that the child brings to his play, the Kingdom is far from us. To watch health returning to the disease worn body, hope to the discouraged soul, should be one of the greatest joys this life affords.

Not always will this emotion expend itself in an exuberant outburst, such as Patti experienced when she had sung unusually well and rushed to her dressing room exclaiming, "I sang divinely, I sang divinely," but always, underneath, vibrating with confidence, will be the knowledge that in the scheme of things your life counts for something.

Another side of equal importance is *efficiency*, and service to be efficient must be intelligent. At one time the woman who undertook this line of work was a creature of very low mentality, and even less moral power. With the advent of one woman of superior intelligence it was lifted from one of the most undesirable lines to a profession, an art. Your mind must be clear, and anything that would tend to lessen your mental power must be set aside.

If you are to keep abreast of your profession you must somehow find time for study. The very latest methods you must be familiar with, not that you may accept but that you may weigh and consider in the light of your experience; use what is valuable and discard the worthless. Gladstone says, "Get knowledge, all you can; and the more you get the more you breathe upon its nearer heights their invigorating atmosphere, and enjoy the widening views, the more you will know and feel how small is the elevation you have reached in comparison with those immeasurable altitudes that yet remain unscaled."

Be thorough in all you do and remember that though ignorance may be innocent, pretension is always despicable. Be strong and the exercise of your strength today will give you more strength tomorrow.

In order that you may study, time is essential. Another great mind has drawn our attention to the fact that "All good gifts in life depend on time for their value. What are friends, books or health, the interests of travel or the delights of home, if we have no time for their enjoyment? Time is said to be money—but it is more, it is life: And yet, many who could cling desperately to life think nothing of time." Chesterfield very forcefully assures us that "every moment you now lose is so much character and advantage lost; as, on the other hand, every moment you now employ usefully is so much time wisely laid out at a prodigious interest."

In order that you may secure the time that is so vitally important, you must be systematic. The individual who lacks system squanders recklessly the element that you in your busy life will find absolutely essential to a real success. If you have discovered a lack of organization in your character, begin at once to overcome the weakness. The systematic mind works easier and accomplishes much more than the one which lacks order. Ruskin tells us, that he never knew his mother to be in a hurry nor was she ever behind. Breathless haste is the chronic condition of the unsystematic person struggling vainly to do today what should have been done yesterday or last week. Make a plan of your work, then work your plan.

The third point to be considered is *self-effacing* service. Love of self is at the bottom of our very existence and rightly so; yet we are told that "greater is he that overcometh himself than he that taketh a city."

The individual that calmly, dispassionately sets self in the background and puts duty in the foreground has achieved one of the most difficult of all human tasks. As nurses, you must do this constantly. On duty you are soldiers; yours is not to reason why, yours is but to do or die. You have no time to think of personal likes and dislikes, even your rights cannot be considered. The world of pain and need has called; you have responded, and your lives are no longer your own.

Florence Nightingale saw a nurse scrubbing out a room, because, she declared, it was unfit for her patient to enter. Miss Nightingale said, "I do not approve of a nurse wasting her energy scrubbing floors; but that woman had the true nurse's heart and any nurse who had done otherwise has missed her calling." Your patient and his needs must come first, your rights are secondary.

A sick body frequently means a sick mind and heart, and your duties do not stop when you have done your utmost for the physical side; it falls to you also to "minister to the mind diseased."

Here, perhaps, more than any other place, self is going to imperatively demand a hearing. Love of work may waive your rights and recognize no hard and fast line as to what constitutes that work, but over and over again self is going to demand appreciation, or at least recognition of the service rendered. Words that sting like a lash, criticisms that scathe and burn will make you wretched if you fail to recognize and make allowance for the presence of mental as well as physical disease.

Lastly, but above all, let your service be reverent. You can never afford to forget that the body is the Temple of Divinity, diseased, unsightly, perchance desecrated, but still the temple. In ancient days the maidens who ministered at the altar of the gods were recognized as set apart, their sacred office lifted them above the masses, and your office is infinitely more sacred. Oliver Wendell Holmes expressed this thought very beautifully when he said, "If performed in the right spirit there is no higher worship than the unpurchased service of the medical priesthood. The sick man's blessing reaches Heaven through the battered roof of his hovel before the Te Deum that reverberates in vast cathedrals."

Again I congratulate you, priestesses in the Temple of Service. Your whole life will be a life of giving but "as ye shall give so shall ye receive." Therefore, give intelligently, but lavishly of your sympathy, your love, your confidence, your hope; keep the river of your life purified by its motion and know that "he only lives whose brain is growing quicker, whose heart is growing softer, whose spirit is entering into living Peace."

722 North Forteith Street.

SOME THOUGHTS ON A SEASONABLE SUBJECT *

HENRY WILSON, M.D.
SOMERSET

In the fall of the year, in the rural districts, such as characterize Somerset County, there occur annually, conditions which mean considerable work for the doctors. The causative factors of these conditions are often not understood and consequently the recovery from them is at times retarded; patients and relatives are dissatisfied; the honest earnest physician sometimes mystified, sometimes inclined to question his own ability and sometimes inclined to take a nihilistic attitude toward materia medica.

The fall season means the gathering of crops which represent an abundance more marked than at any other period of the entire year; an abundance of material with a tendency to spoil before it can ordinarily be consumed, and with the unwise effort to save it, it is, as they say eaten "to keep it from spoiling," without any comprehension or understanding of the spoiling it accomplishes in the human machine which swallows it; an abundance prompting to dissipation and excesses in the consumption of fruits, vegetables and meats of various kinds, with a resultant engorgement of the human machine, developing symptoms differing in individuals dependent on the weak spots in their make-up.

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* Read before the Somerset County Medical Society, March 20, 1917.

A wide open door of invitation is presented to influenza, pneumonia, true typhoid, paratyphoid, pseudotyphoid, or autotoxemia with superficial typhoid symptoms, all of the infectious, or contagious diseases, tonsillitis, common colds of the coryza or bronchial character, the various forms of rheumatism and neuralgia, urticaria, eczema, nephritis, diabetes, arteriosclerosis and any other derangement which can develop within the human body from a disturbance of the metabolic equilibrium, the equality between the absorption and assimilation of food and the excretion of end products. These conditions are dependent on, or accompanied by, what has been regarded as an excess of acids, and we have the terms, acidemia, uricacidemia, acidosis. These terms it is claimed are negative ones, because the pathology of the condition is really a diminished alkalinity of the blood. On the subject of acidosis, an article in the *Medical Sentinel* says: "With our growing knowledge of the conditions known under the name acidosis, we are gradually getting a clearer insight into and better understanding of many difficult problems in internal medicine, and are able to better appreciate many conditions that were formerly obscure and unexplainable."

While the knowledge that acidosis occurs as a symptom in the terminal phase of diabetes was possessed by many of us we were unaware that it is a condition that may and often does occur in patients suffering from diseases accompanied by persistent vomiting, where there has been a persistent diarrhea, or starvation, or in patients who have been on a starch-free diet for any length of time. Other conditions which are mentioned as factors in the production of this condition are chronic inflamed tonsils, fat indigestion as well as in diabetes. Acidosis occurs in these conditions as a result of the lowering of the normal alkalinity of the blood, and the system becomes overwhelmed with an acid intoxication. This may become so severe as to result in coma and death. This acid-poison is beta-oxybutyric acid and is formed as a by-product in the digestion of fats. Normally this acid is quickly oxidized and eliminated. In acidosis, however, this oxidation fails and beta-oxybutyric acid and its derivatives, acetone and diacetic acid, saturate the tissues and fluids of the body, where it can be found in large quantities in the blood and urine.

Inasmuch as it is claimed that this failure of oxidation is due to a lack of carbohydrate elements in the food ingested it is urged that after persistent postoperative vomiting, starch in a form easily assimilated be given in plentiful quantities. It is recommended also that in such prolonged and wasting diseases as septicemia, typhoid and pneumonia starch should form an important article of diet.

In children, acidosis is not an uncommon condition and the possibility of its occurrence should be constantly borne in mind. The symptoms are usually loss of appetite, nausea, vomiting, coated tongue, thirst, prostration, diarrhea. In a small percentage of cases restlessness, dizziness and cerebral symptoms may be present. There is a moderate degree of fever with a proportionally rapid pulse. There is frequently dyspnea. In practically every case acetone can be found in the urine; at times, however, the urinary secretion is so scanty that but little acetone may be excreted.

The treatment is simple and consists of combating the acid condition by the administration of alkalies, sodium bicarbonate being the most efficient. The dose must be large so as to combat the acids, with as little delay as possible, its size and frequency depending on the severity of the case. Sixty grains every two hours is recommended by Metcalf in treating the condition in children. A close watch must be kept on the urine as to the indications for increasing or decreasing the dosage.

Kellogg, in *American Medicine* for June, 1916, writing on a diet as means of combating acidosis says: "Many laboratory and clinical studies have demonstrated that the normal functioning of the body cells requires the maintenance of the reaction balance. The arterial blood must be kept neutral or slightly alkaline. Acids are toxic to all living cells either animal or vegetable. The neutrality of the blood is maintained normally by the removal of surplus acid radicles by the kidneys and by neutralization of the excess of acids by ammonia, which if not so used would be converted into urea. When for any reason this balancing mechanism breaks down, the alkaline reserve of the body is lost, alkali starvation results, all the nutritive functions become disordered and coma, even death, may supervene."

It is evident then, that in the treatment of these conditions the protein ration should be reduced to a minimum and carbohydrates provided in abundance. Orange juice and other fruit juices are an excellent source of carbohydrates for use in these cases.

Dilute lemonade sweetened with malt sugar is another convenient means of introducing carbohydrates. Malt sugar may be taken with meals in place of cane sugar, or in lemonade, or orange juice and at frequent intervals between meals. Malt sugar has the advantage that it is less sweet than cane sugar and is easily tolerated by the stomach and it may be taken in large quantities. An abundance of water is needed to wash away the products of tissue disintegration and especially to aid the kidneys in eliminating acid radicles.

Rheumatism and neuralgia are very prevalent throughout Somerset County during the fall and winter, because of the abundance of food stuffs, together with crowding the periods of eating closer on account of shortened daylight, the lessened amount of work which permits spending more time at the table, and extra eating through the lengthened evenings. Gilbert speaking of rheumatism says: "Recent advocates of the bacterial origin of rheumatism offer, in support of the germ theory, the argument that tonsillitis preceding rheumatism doubtless means that the tonsils are a port of entry by which the germs gain access into the organism. But it would be just as rational to suggest that the skin is a port of entry, as observed in the eruption which often precedes the rheumatic attack. From the view-point we have taken, however, instead of their being ports of entry to admit some external infectious agent, the mucosa and the skin in both instances are attempting to serve as ports of departure for the exit of an internal auto-infectious agent. Be that as it may, it is true that the average case of rheumatism is a separate and distinct entity which, whether or not it be accompanied by what may be regarded as specific germs, is unquestionably accompanied by an accumulation of acids which must be removed or neutralized before the individual can be benefited."

Proper regulation of diet will restrict accumulation of the acids, selected eliminants will remove some, alkalies will neutralize; those three features worked efficiently in combination will bring success.

It should be borne in mind that while rheumatism and other conditions dependent on or accompanied by acidosis may reach a climax and manifest themselves abruptly, the conditions which brought them about may have been accumulating for years and considerable time may be required thoroughly to eradicate it. In a way it is measurably unreasonable to expect that diseased conditions should yield to treatment in much less time than was taken in producing such conditions, so it is the part of wisdom and discretion for the physician to make clear to his patient that while the trouble in hand may have seemed suddenly to spring into existence, it was probably months, or years, in reaching its open demonstration, and it should be borne in mind and explained to the patient that the removal of the distressing symptoms does not mean that the disease itself is completely abolished. The acute infectious diseases with their periods of unobservant incubation, followed by their demonstrative periods of approximately corresponding time, are illustrative of the thought in mind.

Formerly persons affected with rheumatism and other acid conditions, and the physicians attempting to treat them have been at decided disadvantage because of the prevalent belief that safe and sure relief was only possible through drugs, which have been high in price.

More satisfactory financial and physical conditions are now possible. In the November 11 issue of *The Journal of the American Medical Association* are given some of the findings of the Therapeutic Research Committee of the Council on Pharmacy and Chemistry of the American Medical Association, who have been working for the past four years. This committee reports that the reputed superiority of the so-called "natural" over the synthetic salicylates has been a superstition fostered mainly by interested manufacturers.

Studies on the toxicity of the salicylates were carried out by sending samples of natural and synthetic sodium salicylates to different clinicians, the samples being unlabeled and the collaborators being asked to report whether they could distingush any difference between the samples and if not to report results objectively.

The collected reports showed conclusively that the two products were absolutely indistinguishable in their effects, so that there is no longer any reason for preferring the expensive natural to the inexpensive synthetic product. They also investigated the purity of commercial sodium salicylate and found that the cheapest brands complied fully with the pharmacopeial requirements, so that the fear of impurities need not be entertained.

This same committee also went on record in declaring that strontium salicylate is in no way superior to sodium salicylate. In their search for uric acid solvents they found that the alkalizing of the urine was the most powerful factor and that while the particular alkali made minor quantitative differences, sodium bicarbonate did all that could be accomplished by any alkali.

With any condition presenting acidosis, the essential thing is to secure some approximate idea of the measure of the condition to be combated, because the more quickly it can be accomplished the better, the size and frequency of the dosage depending on the severity of the case. Sometimes it might be necessary to give what would be regarded as enormous dosage to save the life of the patient, as in such cases of children, where Metcalf advises 60 grains of sodium bicarbonate every two hours.

In ordinary practice, the average physician has but a very haphazard knowledge of the urinary acidity of his patient. The usual extent of the examination is to try the urine with some litmus paper; if it shows the acid reaction that is as far as it goes, without any knowledge as to whether it is too little or too much.

An editorial in *The Medical Council* for June, 1916, on acidosis gives what is claimed to be "a simple but adequate test for showing a relative degree of acidity."

The directions are to dip clean filter paper into the urine to be tested, and upon the wetted area drop one drop of a solution of methyl red. If acid to this indicator the spot will turn red and if alkaline, canary yellow. Normal urine will not react red to this solution except before breakfast. Only urine containing approximately ten times too much acid reacts. If the urine is acid to methyl red drop a drop of paranitrophenol on another bit of urine-wetted filter paper; if it does not change color the urine is exceedingly, even dangerously, acid; whereas, if it is alkaline it changes to a greenish yellow.

This is spoken of as "an adequate test," but it does not begin to register until the acid is ten times greater than it should be. With a urine five times too acid it would make no showing and would mean an uncomfortable and serious condition to the producer of the urine. Urine may show the ordinary reaction to blue litmus paper and at the same time be only one third, or less, as acid as it normally should be and that condition would create enough disturbance to require the service of a physician. If the physician to whom the case might be presented made no examination of the acidity beyond the usual litmus paper, he might flounder around a long time before benefiting the case, if death did not supervene.

Your writer has for some time been using with a great deal of satisfaction an apparatus which is cheap, is easily worked, and has the feature of scientific accuracy on both sides of the normal line, sufficiently close for the ordinary every day worker outside the large laboratory. It is a simple little instrument devised by Dr. H. R. Harrower and consists of a small glass tube so graduated that 10 c.c. is the first measuring point. From this upward the tube is graduated in fifths of a degree, to 100 degrees, each degree representing the amount of decinormal sodium hydroxid solution required to neutralize 100 c.c. of urine.

The method of using is to fill the tube with urine until it reaches the 10 c.c. mark, two drops of phenolphthalein indicator solution are added, then with a medicine dropper decinormal sodium hydroxid solution is slowly added, inverting the tube after each addition, until the color of the fluid has just been changed from a yellow to a light rose pink. The acidity in degrees can then be read on the tube at the level of the fluid.

This instrument very much simplifies the laboratory facilities of the physician, increasing his diagnostic capabilities and adding to his professional success. Sample of the tube is submitted for inspection.

EARLY DIAGNOSIS OF CHRONIC HEART AND KIDNEY DEFICIENCY *

FRANCIS ASHLEY FAUGHT, M.D.
PHILADELPHIA

The following remarks will be confined chiefly to a consideration of the early diagnosis of those degenerative changes involving the heart muscle, arterial walls and kidney structure, which are the result of some long-continued toxic irritant, omitting entirely those inflammatory changes, due to acute, toxic (irritating poisons), and infective conditions, where the development of symptoms is usually sudden, acute and definite and where a diagnosis is readily made.

Our present-day conception of the chronic degenerative changes in the circulatory system forces us to link the heart, the arteries and the kidneys into an inseparable trio, in which, though one portion of the system may eventually outrun the others and be the ultimate cause of death, nevertheless clinically the condition is one of cardiovascular-renal disease.

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* Read before the West Branch of the Philadelphia County Medical Society, Feb. 20, 1917.

In the study of all chronic degenerative processes involving the cardiovascular and renal systems we are eventually forced to a consideration of the condition of the myocardium. The myocardium is the most important muscular structure of the body. This fact becomes of increasing importance in this age of heart-muscle defects. No matter what the cause of the patient's condition one cannot comprehend it fully without studying his heart.

Neither can one treat a patient properly without considering the management of his circulation. In the administration of a drug one should always consider its effect on the patient's heart.

The extreme seriousness of heart-muscular defects to an individual is fully realized when we consider that a man weighing 170 pounds has approximately 13 pounds of blood (this does not apply absolutely to the obese or to children), while his mental and physical efficiency depends on his ability properly to circulate one-thirteenth of his body weight at a rapid rate through the various arterial, venous and capillary channels of the body. This also emphasizes the significance and often deleterious effect of continued strain or irritation involving any portion of the circulatory tree, particularly the nutrient arteries of the heart and of the kidneys.

Unfortunately, the early diagnosis of chronic myocardial degeneration is as difficult as it is important; while the present age demands so much greater expenditure of energy and entails such an excessive wear and tear on the circulation, that not only is this condition more frequently encountered, but it is also met at a much earlier period of life than formerly. Thus it often happens that these changes which in the past were looked on as one of the accompaniments of old age are now met in early middle life. These facts make the diagnosis and treatment of chronic cardiovascular-renal disease almost an economic problem, in that if diagnosed in its incipiency and properly managed, both by the physician and patient, its progress will be generally arrested and the years of efficiency of the individual prolonged.

The earliest subjective evidence of cardiosclerosis is the direct result of a diminution in the reserve force of the heart, manifested by a limitation of the field of cardiac response (as shown by the work test to be described later). Unfortunately, patients rarely present themselves to the physician at this stage, but delay until this exhaustion of reserve power has progressed to a point where some distressing symptom, such as breathlessness after slight exertion, a feeling of tightness across the chest when entering a region of reduced temperature, actual pain in the chest, cardiac asthma, or "bronchitis" has appeared.

The importance and value of a careful history cannot be overestimated, since early evidence of failing cardiac reserve is often hard to obtain, most patients appearing to hide slight impairments of bodily vigor, not seeking relief until the symptoms are distressing, that is, at a period in the evolution of the disease when the changes in the heart, blood vessels and kidneys are well established.

A most valuable aid to the early determination of cardiosclerosis is found in the sphygmomanometer. The systolic blood pressure is elevated often to a marked degree and the pulse pressure increased. This is a direct result of an increasing demand on the heart for additional work, which is responded to by increased muscular contraction, produced at the expense of cardiac reserve. In the beginning, while the heart muscle is approximately normal, we have a definite enlargement of the heart and a temporary increase in efficiency. This process of hypertrophy is probably the first effect of a toxic action directly affecting the heart, the blood vessels or kidneys, which finally leads to degenerative changes in the heart muscle, impairing its contractile power and tonus, bringing about a connective tissue proliferation that eventually develops into myofibrosis.

Through a knowledge of the factors underlying the reduction of the field of cardiac reserve and the reaction of the heart to increased demand for energy, and the relation of the blood pressure factors to this condition, the work test has been evolved.

The method of applying the work test which I have pursued for many years is to take and record the systolic, diastolic and pulse pressures and the pulse rate, then to have the applicant take rapidly ten bending movements with the knees rigid and the hands extended above the head, flexing the body strongly at the hips; immediately after this another complete test is made, which is repeated two or three times during the next five minutes. Commencing with a normal ratio and pulse rate, we find in the normal individual an increase in systolic, diastolic and pulse pressures and an accelerated pulse rate. During the period of rest succeeding, the pulse rate will return to normal before the systolic pressure. In many instances this return takes place rapidly so that it is often advisable to repeat these tests at one-minute intervals. In the presence of myofibrosis, even with an originally normal systolic pressure, ratio and pulse rate, we find (*a*) that the systolic may not rise at all, (*b*) that the pulse pressure may not increase but may become smaller, (*c*) while the pulse rate accelerates rapidly and remains rapid after the fall in systolic pressure. It may also be noted (*d*) that the blood pressure values after rest may be smaller than in the beginning, while (*e*) the pulse rate may remain accelerated.

Barringer[1] has recently placed this test on a more scientific basis by reducing the amount of work performed in these tests to definitely measured amounts, through the employment of an ergometer, so that we are not only able to demonstrate the changes above noted, but also to measure the degree of impairment by noting the amount of work in foot pounds or kilogrammeters necessary to bring about cardiovascular fatigue.

In addition to these changes, it is possible to detect cardiac enlargement by percussion or by the use of the radiograph, although it must be remembered that this enlargement may be due to dilatation alone. The electrocardiogram may be relied on to show enlargement and to differentiate between hypertrophy and dilatation, although I have had no personal experience with this method of diagnosis.

Auscultation may be of value by showing the existence of an accentuated pulmonic second or an aortic second sound.

As long as the heart muscle itself suffers little or no damage, cardiac symptoms will not be evident, as it is only when the degenerative process has progressed to a point when dilatation and the resulting cardiac insufficiency occur, that clinical manifestations are evident; at which time the symptoms accompanying such insufficiency are similar to those found in cardiac insufficiency following valvular lesions.

The degree of elevation of the blood pressure has no special significance since it bears no definite relation to the degree of myocardial involvement. Its chief significance is indicating the degree of arterial and nephritic changes which have a most important bearing on the prognosis, as when the arterial walls and kidneys are involved to an appreciable degree they become most important factors in the rapid destruction of cardiac reserve.

In the advanced cases, the absence of definite signs of circulatory failure and the presence of a high systolic, large pulse pressure and a slow pulse argue in favor of a fairly competent myocardium and adequate kidney function. Such cases are prognostically more favorable than those with evident kidney degeneration and myocardial weakness, as shown by signs of fluid retention, venous engorgement, a falling systolic pressure and diminishing pulse pressure. This again emphasizes the predominance of the myocardial factor in this group of correlated conditions. In the early diagnosis of myocardial conditions the urinary changes are not significant, often no departures from normal are noted. Eyeground changes when present may be significant, but are frequently entirely wanting.

Practically speaking, we are confined in our early diagnosis to four fairly definite signs and symptoms: (1) The breaking down of cardiac reserve, as shown by certain subjective symptoms, which may be detected by careful questioning of the patient; (2) a rise in systolic pressure and an increase in pulse pressure; (3) the reaction of the patient to the work test; (4) the electrocardiogram.

The symptoms accompanying the moderate type of cardiosclerosis are extremely varied, and at first sight hopelessly confused. Thus chest pain may be persistent or may never occur. The same may be said of cardiac irregularity, although irregularity may be early encountered and extra systoles are frequent. Cardiac asthma may appear early or may never develop.

Rapidity of rate may be absent until the systolic pressure begins to fall. Edema may be extensive, may appear early or may not occur until the terminal stage. Aortic and mitral murmurs may or may not be present.

Cases of advanced cardiosclerosis may present every phase and combination of cardiac disease, in which a final correct diagnosis can only be arrived at by careful study and painstaking analysis.

The determination of early chronic degeneration of the kidneys presents even greater difficulty than the condition already discussed. Our deductions as to the probability of early kidney degeneration are often purely inferential and many times wholly secondary to the more certain indications of general arterial fibrosis and chronic myocarditis.

The tests that we are accustomed to apply to the study of chronic interstitial nephritis are valuable only after permanent change has occurred, as they depend on the demonstration of deranged function, due to kidney insufficiency, when they give definite indications and show destruction of functioning tissue. This applies to the phenolsulphonephthalein test and the several tests for determining the degree of acidosis. The usual urinary examination is frequently most disappointing, since it is common experience to find even greater pathologic change in the urine in cases suffering from various maladies in which temporary strain is thrown on normal kidneys, than it is to find definite evidence in well-advanced instances of chronic interstitial nephritis.

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[1] Barringer, T. B.: Arch Int. Med., March, 1916, xvii, pp. 363-381.

Recently the specific gravity fixation test has been suggested as an additional means of determining the kidney's ability to eliminate solids in proper proportion and rapidly to remove excess of fluid from the system. I have not learned, either from my own experience or from that of others, how early this data may become available, but I am inclined to believe that it may assist in early diagnosis. This test consists of collecting a series of specimens at certain intervals during the day and night, measuring their quantity, determining their specific gravity and charting a curve in which the evidence of defective kidney elimination is shown by a fixation of specific gravity, usually low, and an increase in the nocturnal volume of urine.

The blood pressure test here is again one of our chief guides, since it is generally believed that one of the earliest signs of beginning chronic kidney degeneration is a rise in systolic pressure. There is nothing, however, characteristic here, as compared with myocarditis, as long as an efficient heart hypertrophy is the result.

Once more we are forced to rely largely on the family and personal history, taking into account such matters as definite familial tendencies and past infections, particularly typhoid and syphilis, other serious and prolonged illnesses, excessive mental strain and severe exposure; adding to this information any symptoms found in the group of those early ones already discussed, and finally judging the relative significance of all by any evidence suggestive of a general progressive arterial fibrosis which might be expected to involve the kidneys.

In closing, I would again repeat the importance of closer study of all cases involving the cardiorenal trio, in an effort to make the earliest possible diagnosis in order that our patients may receive the benefit of the proper corrective measure applied to arrest this chronic progressive condition. I would also warn against snap judgments without adequate study and too definite statements as to the existing pathologic conditions on too flimsy data.

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TRANSPLANTATION OF TIBIA FOR NASAL DEFORMITY*

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The physical and mental discomfort of a nasal disfigurement is not the only hardship of patients who have had traumatic injuries of the face. Whenever such a patient endeavors to secure employment his appearance militates against his engagement. The surgeon here has a decided field of usefulness, and the works of Carter and Roe of America and of Josephs of Berlin have been of distinct advantage and relief to a class of patients heretofore almost neglected.

As previously noted in my article in the *Laryngoscope*, the submucous operation will cure many slight deviations of the nose, especially those of the tip. The depressed fractures, however, need a more extensive operation with some heavy material to replace the lost bone support. The use of paraffin for a while seemed to fill this need, but later reports did not give the result one would desire, so that the bone transplant found a new and waiting field. The former method of using a resected rib to make the bridge caused some difficulties and dangers, such as pleurisy and pneumonia. The idea of the front surface of the tibia offered a better solution because of the lessened risks and the shorter convalescence and lessened pain after the operation.

During the Clinical Congress of Surgeons in Philadelphia in October, 1916, I remade a patient's nose, and herewith show the photographs, as many of the surgeons were anxious to see the after results.

The patient, S. P., aged 34, Italian, married, having two children, was a sailor and barber. While acting as a sailor in the United States Navy he engaged in boxing matches and had his nose fractured several times. He first consulted me two years ago to have the obstruction in his nares removed, as he was unable to get any air through either nostril. Under local anesthesia I did a submucous resection with great difficulty, as both nares were completely closed by the quadrilateral cartilage. I found it necessary to take out every portion of the septal cartilage, for it was bent at such a sharp angle any remaining cartilage would have held the mucous membrane across the vestibules by its sharp angles. I found the layers of the cartilage had been split by the blows upon his nose, for after the front obstruction was removed I discovered a piece of this cartilage driven back alongside the perpendicular plate of the ethmoid.

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* Read before the Section on Laryngology and Otology of the College of Physicians, Jan. 17, 1917.

Following this operation he obtained such marked relief in breathing he disappeared. Upon his seeking a new position lately he found his facial disfigurement was very much against his securing work anywhere, so he recalled my desire to rebuild his nose, and returned requesting relief.

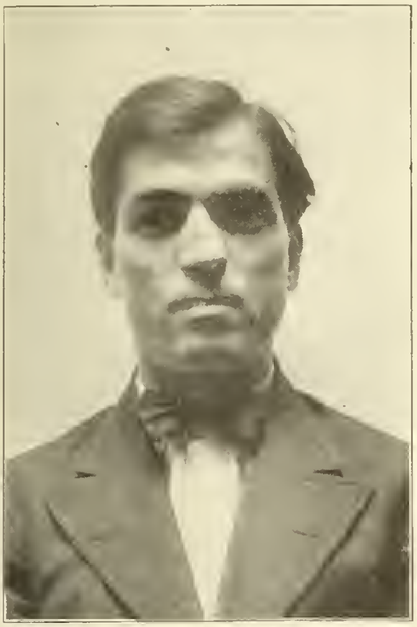

Fig. 1.—Before operatjon. Deformed, crooked flat nose. Complete occlusion of both nares.

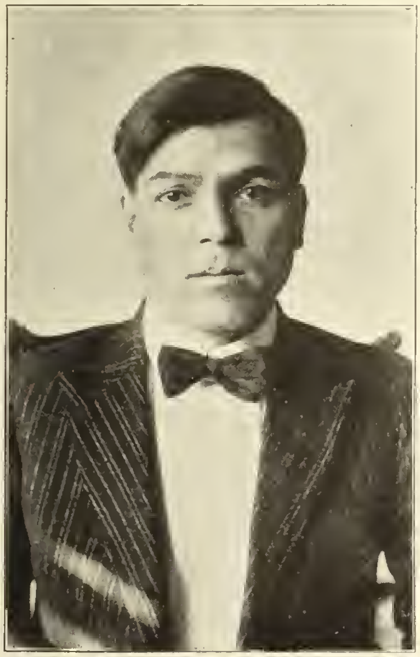

Fig. 2.—Tibial transplant in position four months after operation. Deformity corrected.

The operation was done in the Presbyterian Hospital, October, 1916, ether being given by Miss Strang. The face was prepared with soap and water and alcohol the night before and a moist bichlorid dressing was placed over the nose. At operation the face was again prepared. Two operators, Drs. Jopson and Stauffer, and two assistants, Drs. Hunter and Murphy, were used so that time would be saved and the two operating on the leg would not handle the nose. The incision is a curvilinear one between eyebrows, con-

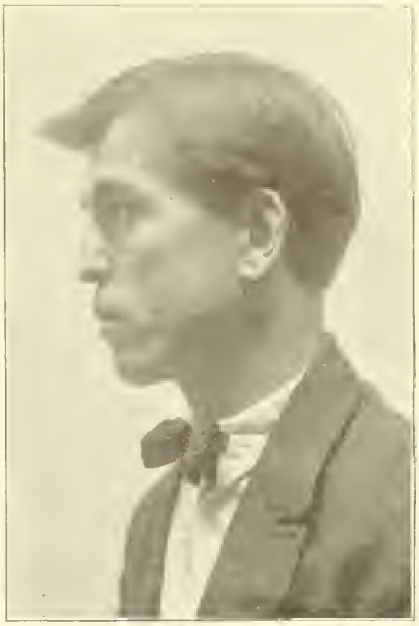

Fig. 3.—Before operation. Profile showing depression in nose.

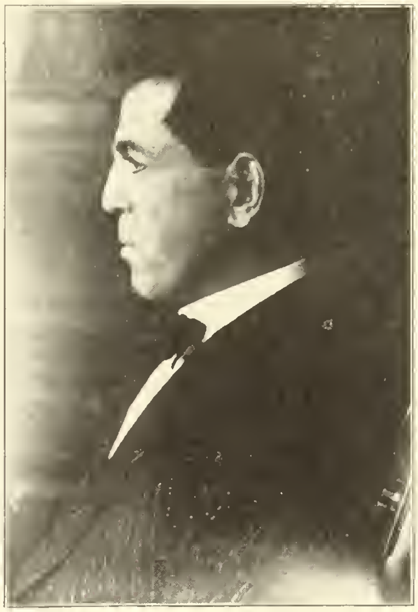

Fig. 4.—After operation. Profile showing correction of depressed nose. Note the straight line of nasal bridge made by transplant.

vexity down. Periosteum is cut higher up than skin incision and loosened above and then turned back off nose on the bridge below. I dissected the skin over the nose by Freer's septal dissectors from an incision just below the glabella where the bridge of the spectacles rests, and inserted piece of tibial bone 1¾ inches long by ⅜ of an inch wide and ¼ inch thick, which was skilfully chiseled out by Dr. John H. Jopson while I was preparing the bed in the nose for the bone transplant. This bone transplant I slipped under the skin to the tip of the nose and the upper end inserted under the upper portion of the periosteum of the forehead and the periosteum of transplant sewed fast to the periosteum of the forehead. The skin is closed with fine horsehair stitches and a gauze padding is placed over the nose and sides to protect it from injury while patient is recovering consciousness. The first day the skin over the whole nose looked purple. Two days later the nose looked very red over the bridge where the transplant was causing pressure and the following day two pimples appeared at this spot, but no further complications arose and he made a perfect recovery except for a sore leg which made him lame for about ten days.

My reason for using the tibia is that in several cases I have seen the lung puctured in using a rib resection and have known of one death, and this danger is offset by using the tibia. In using the tibia you get a stronger piece of bone, and I would advise against much thinning, as some do in the rib resection; the thicker bone will hold up the nose better and as this patient stated, "I get more air through my nose since you put the new bone in."

That it is a useful operation you can see by comparing the photographs before and after operation. His actions on Jan. 1, 1917, will prove that it will stand hard usage. In a street fight when attacked by ruffians my patient received a beautiful pair of black eyes and several hard punches on his nose. The lump on the right side of his nose received in this encounter has not entirely subsided, and the nose is still swollen, but what is stranger still is that the nose shows that the bone graft was able to withstand the strain of a rough and tumble fist fight.

In making this graft the important points are to get the periosteum of the bone graft sewed fast to the periosteum of the forehead under which you insert the graft; to put the periosteum next to the skin so as to prevent the formation of new bone; and to have the piece long and wide and strong enough. The most difficult part is getting the skin dissected off the bridge of the nose, especially where the perpendicular plate joins the cartilage, as you are apt to puncture the mucous membrane into the nasal chambers, thereby making an open wound into which the transplanted bone will slip, protruding into the nares. This can be overcome by keeping the dissector and later the transplant close to the skin and not hurrying during the operation.

218 South Twentieth Street.

THE TREATMENT OF INFECTION FOLLOWING LABOR, MATURE AND PREMATURE *

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Questions of economics and conservation occupy the attention of the public today more than at any period since the beginning of man. The inherent qualities and assets of economics and conservation are more fully appreciated than ever before. They seem to have assumed an unusual significance and one hears these questions referred to constantly. The principles of conservation bear a distinct relation to medicine and the laws of life in general and the conservation of human health and life is the most consuming question of our time. Economics bears a similar relation and it is unusual to hear a medical topic discussed without special reference being made to its economic phase.

The tremendous destruction of human life by tuberculosis, venereal disease, cancer, and contagious disease in general has brought our civic organizations, and the medical profession particularly, to a full realization of the tremendous tax exacted by these conditions, and has stimulated medical science to a study not only of their cause, prevention and cure, but also of their economic control.

The consideration of this phase of medicine in general has given birth to the intensive study and practice of preventive medicine, and it has been estimated by Dr. Irving Fisher of Yale that the annual loss to this country from preventable disease amounts to $1,500,000,000. These questions apply especially to the forces that are concerned with the reproduction and propagation of life, and these factors constitute the greatest concern of the nations of the world today. This is particularly true of the battle-torn countries of Europe, where the destruction of humanity stands unparalleled in all history. Any power, therefore, fundamentally directed to the conservation of life is a vital one, and hence are we not justified in assuming that the question of infection following labor forms one of the big economic and conservative themes of our time?

On the propagation, extension and preservation of human life and its economic control

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* Read before the York Medical Club, Feb. 16, 1917, and the central county societies at the meeting at Tyrone, Sept. 12, 1917.

depend the existence of the human family and the future of all mankind. The medical profession has been awakened to this vital problem and the desire to conserve and extend the life of man has been responsible for the marvelous advance made in medicine and surgery in the passing years. Today economic and conservative surgery is practiced with feverish anxiety and in all time the efforts of the laboratory worker, the internist and surgeon have been directed to reduce morbidity and decrease mortality.

The European war emphasizes this point with poignant intensity for today in the hemoglobinized battle fields of quaking Europe, surgery is practiced with an eye single to conservation and restoration. Never in human experience, in its relation to medicine and surgery, have these words been fraught with such unusual significance. To the nation who embraces these factors to the fullest degree, in conserving her forces both material and human, victory is sure. To the nation indifferent to the value of these forces, it will spell defeat.

The work of the American Ambulance Hospital in Paris is characterized by conservation to a degree unique in the annals of surgery. The work of the wonderful Dr. Alexis Carrel in his hospital in Compiègne is almost too marvelous to conceive. He is said to be healing soldiers to order. He has devised, it is claimed, a method by the help of his physicist assistant, Du Nuoy, by which he is able to calculate accurately and to the exact day, the time required for a wound to heal. By this method he is able to estimate the time a wounded soldier will be domiciled in the hospital and figure the exact time the patient's bed may be utilized by a wounded comrade. Du Nuoy was sent for by Dr. Carrel and was assigned to the task of estimating the time of healing and as a result of his investigations and patient labor a new law has been added to the science of medicine. To this achievement Dr. Carrel has applied the term "The Law of Cicatrization."

The question forming the topic of this paper is equally important, in an economic and conservative sense, as are the applications of these factors in a medical way to the battle field. The frequency, morbidity and mortality of infection following premature and mature labor are still higher than they should be and despite the advancement of scientific obstetric surgery, our results have not been ideal. In the fight against puerperal infection our conduct of maternity cases has, naturally, progressively and materially improved, and our results, also, to a corresponding degree, since Ignaz Philipp Semmelweis in 1848 taught us that the causative agent was introduced from without and working with this conviction reduced his own obstetric mortality from over 11 per cent. to a little more than 1 per cent.

Our results, however, have not as yet reached the pinnacle of perfect surgery. The morbidity and our mortality are still entirely too high. There is not a clinical symptom associated with such startling significance as the elevation of temperature following delivery and to the accoucheur, none that causes more worry, more fright, more concern, than this. There are but few men in practice who have not had this experience and all can testify as to their helpless distress and misery until the issue was definitely decided. I say there are but a very few men in practice who have not had this harrowing experience on one or more occasions, and when one recalls the fact that there are in the United States 141,241 physicians, it is obvious that this complication of labor is not entirely uncommon.

The question of the treatment of infection following labor has formed a very fertile field for controversy and discussion ever since Oliver Wendell Holmes, on Feb. 13, 1843, presented his immortal paper before the Boston Society of Medical Improvement on "The Contagiousness of Puerperal Fever."

In this contribution he claimed that the poison was conveyed from without. It is interesting historically to record that this paper stirred up a hornets' nest in medical circles generally and in Philadelphia medical circles particularly. He was roundly criticized, especially by Hodge and Meigs of Philadelphia, men who were regarded as the leaders of their day in the center of American medical education. Holmes was not disturbed by the criticism, but, as Garrison says, "He returned to the charge in his celebrated monograph on 'Puerperal Fever as a Private Pestilence.'"

In this paper he called attention to the fact that a young man in Vienna had reduced his mortality to a tremendous degree by simply cleaning his hands with a nail brush and washing them in a solution of chlorid of lime. This man was the heroic Semmelweis and to him belongs truly the credit of first recognizing puerperal fever as a definite blood poisoning or septicemia. His original paper on this topic was published in 1847. His teaching was not generally accepted and his paper, like the paper of Holmes, started a bitter controversy. He was harshly condemned for his teaching, and being sensitive and impressionable by nature, unable to withstand the strain of worry and criticism, as a result of continual brooding became insane and died at the age of 47 years.

We all love to refer to the work of our medical forefathers and to them we give honor and all praise. For it is to the sacrifices and labors of our martyrs and heroes we owe our scientific advancement. But have we profited fully by their teachings? Have we heeded their instruction and improved thereby to the extent we should? Normal labor is still not without danger and the nightmare of the invading streptococcus is still an existing menace.

According to the United States Census for the year 1914 there died in this country 10,518 women from childbirth, and these figures represent the deaths in only two thirds of the estimated population of the United States. On this basis, therefore, one is justified in believing that at least 15,000 women die from childbirth in this country every year. Add to this the number who die indirectly from complicating conditions of labor and De Lee feels that no exception can be made to his statement that "the puerperal mortality will reach annually 20,000." Dr. De Lee says that "one of the striking facts of the modern hospital treatment of parturient women is the high percentage of patients who have moderate degrees of temperature during the lying-in period." The report of the United States Census for 1914 showed that 4,664 women died of puerperal infection and Dr. De Lee states again that it is impossible to guess how many women actually suffer from infection and who still carry relics of the disease.

He figures that if one estimates the mortality of all cases of puerperal infection as 5 per cent. it would mean that in 1914 there were 100,000 infected puerpera in the United States. Is there a doctor in the practice of medicine today who has not heard the term, "I have not been well since my baby was born"? As Dr. De Lee says, this should make us prick up our ears and heed the warning. It is obviously impossible to estimate the number of spontaneous and criminal abortions that occur in this country annually, but the number runs into the thousands.

Most observers claim that one abortion occurs for every four or five labors at term. The percentage is even greater than this. We have no definite means of estimating, however, because a very large percentage of abortions are concealed. The percentage of infection following abortion is extremely high, and no doubt, the large majority of abortions are infected, either because of interference or lack of proper care during convalescence. Nearly all the cases of abortion admitted to our care show varying degrees of temperature.

TREATMENT OF INFECTION

The treatment of infection following labor forms a problem that involves several principles. First, let us consider infection following labor at full term. Since we have learned more concerning nature's power of resistance, of her ability to generate protective bodies, and in a measure, perform autovaccination and immunization thus primarily localizing and destroying invading hostile organisms, or, secondarily, since we have learned that she, like a retreating army, may fall back until she gathers her forces and fights a running fight, at last conquering in the blood stream, our conception of what constitutes antagonistic and successful interference has changed. With a virulent horde of bacteria rapidly invading the uterine wall, its lymph and blood channels and overcoming nature's first line of defense, thereby giving rise to a constitutional infection and with the uterus empty, it would be rash, futile, harmful, dangerous, and in a certain number of cases fatal to resort to the orthodox method of instituting both local and general measures.

In the presence of general infection, there is no indication for local interference and its employment will only court disaster. Do nothing locally, avoid manipulation, shun packing, shrink from irrigation and scorn curettage. There is no indication for any manipulation or even examination unless, of course, one feels suspicious of the existence of a distinct local accumulation. Douches either vaginal or uterine are harmful. There is no sign or symptom demanding their employment. They mechanically open up raw surfaces and remove nature's barriers of protection, thus destroying more or less natural walls of resistance and the local germicidal properties that nature provides.

I can see no indication for packing the uterus in these cases. There is nothing, as a rule, to drain. The uterus is usually dry and not associated with discharge. Ordinarily in this type of infection the organ is relaxed and the cervix wide open. Gauze packing, therefore, would not do any good, and does gauze act to any greater advantage as a drain in the uterus than it does in any other surgical field? Are we not taught that gauze ordinarily as a drain is valueless and that usually it obstructs more than it drains?

There is no valid reason if these other conditions are contraindicated why curettage should ever be employed yet it is extremely common; yea, only too common, to see patients with this type of infection admitted to our hospital service who have been curetted one or more times and, generally, their condition is aggravated after each curettement.

I recall one patient recently admitted to the Jefferson Hospital who was curetted four times and after each curettement she became decidedly more septic, her temperature rising higher on each occasion. When she was admitted to the wards the pelvis was full of exudate and the uterine body was a sloughing mass.

Curettement in concrete cases of puerperal bacteremia is a measure that is pernicious, mischievous, dangerous and at times fatal. It results in destroying the natural breastworks of protection and thereby throws into the blood stream additional hordes of bacteria which may be sufficient to overthrow all the reinforcements which nature may be able to rush to her defense and thus cause a fatal issue.

Our custom in treating cases of this character is, first, "hands off!" We do nothing locally excepting to keep the patient clean externally. We obtain for her rest, absolute rest. Whenever possible, we provide her with a quiet room; if impossible, we place her in an isolated section of the ward behind a screen. We endeavor to expose her to all the fresh air and sunlight possible. The head of the bed is elevated in order to limit any local infective process to the pelvis, and favor drainage, providing, of course, there is anything to drain. All forms of nervous excitement and emotion are absolutely prohibited. Water is given freely and in abundance. Regardless of the temperature, these patients are fed. High fever is not an indication for food restriction or liquid nourishment. The patient should be fed frequently with concentrated nourishing material and no special limitation should be placed upon the diet. The more nourishment she takes, the better able she will be successfully to battle with the poison.

Active purgation is never resorted to. We prefer to rely on low enemas or mild laxatives. Purgation is avoided with a view to inhibit active peristalsis, which usually results in breaking down barriers and in extending local infective processes in the pelvis and beyond. As water is given freely and abundantly by the mouth, so we also resort to the instillation of this material by the bowel and continuous saline solution both day and night is introduced through this channel.

By the institution of the methods described above our morbidity and mortality have been materially decreased. It is comparatively unusual to see a patient die even in the severe types of infection. I have seen a number of cases in the last two years, both in hospital practice and in consultation, and where this method was carefully adhered to the morbidity and mortality have been strikingly diminished.

There are other resources which one may utilize also in treating these cases. Blood transfusion has been recommended by some men and they claim to have obtained good results. We have had no experience with this method of treatment and, therefore, would not be justified in expressing any opinion as to its value. We have used streptococcus serum and we have employed vaccines, but we feel, as the majority do, that the value of these agents is still questionable.

TREATMENT WITH MATERIAL RETAINED

In cases of infection associated with material confined within the cavity of the womb, providing the cervix is open, the treatment should consist in gently removing this substance either with the finger or with placental forceps, but under no circumstance should the removal of the retained contents be followed by any form of irrigation or by curettage. If the cervix is contracted and closed and the material cannot be reached and easily withdrawn, one would mete out justice and help to the patient by leaving it absolutely alone, and nature, which is anatomically and physiologically prepared for this function, will more effectively and with a greater degree of safety expel the contents than the surgeon who institutes instrumental interference.

In those cases in which there is much odor or discharge or both, do not be led to believe that this symptom and sign demand treatment. The fact that the patient has profuse discharge indicates that she is expelling the material. An offensive odor is respected. Odor is usually not significant of danger, but it may become so, however, if meddlesome surgery is practiced. Odor may indicate the existence of a concealed spark and if this is fanned by manipulation or instrumentation, it may cause a conflagration.

INFECTION FOLLOWING ABORTION

The treatment of infection following abortion, whether spontaneous, induced or criminal, should be along the same conservative lines as outlined for the treatment of infection following labor at term. Prior to two years ago, our routine method of treating these cases with material retained was to institute immediate surgical measures. Up until that period infected abortions were regarded as surgical emergencies and emergency surgery was routinely applied to all. The uterus in these cases was dilated and retained material either removed with placental forceps, a gauze-wrapped finger, a curet, or all of these agencies combined.

We now treat these conditions more respectfully and more expectantly and rarely do we interfere, and this plan is becoming more and more universally adopted. If the material presents through an open os and if it can be readily grasped it should be removed. If the cervix, however, is closed, wait and trust to the powers of nature. In no case is it good surgery to douche and curet.

This question of infection was fully considered by a special committee of the American Medical Association at its meeting in Atlantic City in 1913, and the views expressed by that committee are somewhat along the lines herewith described. Since that period the general trend in treatment has been still more along the paths of conservatism. At the meeting in 1913, Dr. Polak of Brooklyn referred to one hundred consecutive cases of infection following abortion, sixty-five of which had been curetted one or more times previous to coming under his care, and all of these showed a varying degree of pelvic exudate. He then referred to two hundred cases in which no interference was instituted and all of these showed, he said, a diminished morbidity and a decreased mortality.

At this meeting, Dr. Clarke of New Orleans stated that "when the infection is beyond the endometrium nothing could be more unreasonable than to superficially curet the uterus. If the patient is left alone," he stated, "she will autogenously vaccinate herself and the infection in the majority of cases will resolve." It would be impossible for me in this paper to discuss in detail the treatment of localized collections in the pouch of Douglas or in the fallopian tubes. Suffice to say, however, that we should go slowly in instituting surgical measures and still in these cases for a time try methods of conservation. Then, if nature fails, surgical treatment may be resorted to.

Early or hasty surgery in limited puerperal pelvic exudate or puerperal tubal infection is in view of our present knowledge of immunology not indicated and its general practice means sacrificial and frequently unnecessary operations. The axiom usually applied to the operative treatment of pelvic inflammation, "Wait till the temperature reaches normal, then operate," is a wise teaching, but it does not fully cover the premises. At this period, nature's therapeutic agencies are just becoming operative. Give them a chance. Wait until the temperature strikes normal and then still wait, for in so doing one may dodge a dangerous and mutilating operation, and preserve anatomical structures with retentive physiological function.

In concluding, let me reiterate that our whole aim in the treatment of these cases should be directed to economization and conservation of life and tissue, and that these factors are better accomplished by relying on the power inherent in nature than by instituting mischievous and dangerous surgery.

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THE MANAGEMENT OF DIGESTION IN PULMONARY TUBERCULOSIS*

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The management of digestion in pulmonary tuberculosis requires an intimate knowledge of the physiologic individuality of the patient. There is a considerable range of normal variation in the function of the digestive organs. The digestion of a child differs from that of an old man; that of a day laborer from that of a college professor; that of an emaciated individual from that of one who is obese; that of one with anemia from that of one who is plethoric; that of a neurotic from one who is phlegmatic; that of a pessimist of a bilious temperament from that of one who is an optimist of a sanguine temperament. It is necessary to know the individual's normal dietary, whether there exists more or less constantly deficiency or excess of food, whether the diet is balanced or unbalanced as regards proteins or carbohydrates, and if alcohol or tobacco is used to what extent. Due consideration should be given to the effects of a sedentary life, as compared with an active, muscular, outdoor life and the influence of occupation.

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* Read by invitation before the Trudeau School of Tuberculosis at Saranac Lake, New York, Jan. 29, 1917.

Idiosyncrasies regarding food, although rare, do occur. Prejudices regarding certain foods are common.

Only after due consideration of the general factors already mentioned is it possible to give suitable specific advice regarding digestion to patient with pulmonary tuberculosis. The metabolism, digestive organs and juices of one accustomed to an abundance or superabundance of rich food and wines differ from the metabolism of one who habitually partakes of simple food, with little variety and in amounts no more than sufficient for the body's needs. The biochemistry of one who habitually consumes an excess of proteins differs markedly from that of one who consumes an excess of carbohydrates. The metabolism of the "bon-vivant" normally tends to hyperchlorhydria, renal hyperacidity, excessive formation of uric acid and urates, and not infrequently to intestinal toxemia.

Although marked individualism exists in those living under the same or varying conditions, Pawlow has shown that with patience and time the biochemistry of digestion may be modified, as shown by the gradual substitution of milk for meat in the diet of a carnivorous animal, such as a dog, with preservation of good health, and the occurrence of severe indigestion when the abnormal milk diet is suddenly replaced by a normal meat diet.

The relationship of bodily exercise to digestion should not be overlooked. It has long been known that larger amounts of food are required and can better be digested when the individual exercises than when he leads a sedentary life. The importance of a free supply of oxygen by living and sleeping out of doors and by suitable gymnastics as an aid to metabolism should also be given consideration. Pulmonary gymnastics not only increases oxidation, but also stimulates gastro-intestinal peristalsis.

The relationship of the nervous system to the biochemistry of digestion is frequently forgotten. Fear, apprehension, worry, sorrow, excessive responsibilities, over mental work, insufficient sleep causing chronic fatigue, shock from the sudden death of a near relative or friend, or from financial or other losses, may markedly interfere with digestion; whereas hope, cheerfulness, happiness, success and good mental environment aid digestion. It has been proved by experiment that anger or any strong emotion occurring in a healthy individual at meal time may cause a sudden diminution of the secretion of digestive juices and lessen or stop gastro-intestinal peristalsis, thus bringing digestion to a standstill. Less marked similar causes produce the same effect to a less degree. Exercise after eating interferes with digestion, whereas rest for an hour after eating is beneficial.

Frequent interruptions at meals from any cause, as the telephone, for example, interfere with digestion. Prolonged indigestion causes loss of weight and strength and anemia, and so diminishes resistance as to invite tuberculosis, or make active a latent tuberculosis. This condition frequently corresponds to the so-called pretubercular stage. Diabetes, by causing ill health and an excess of sugar in the juices of the body, making it an excellent culture for the tubercle bacillus, is a good illustration of the way in which a disturbance of metabolism predisposes to tuberculosis, even though occurring late in life in one possessing a gouty diathesis. Gout, on the other hand, illustrates how an excess of food and drink, more especially excess of proteins so raises bodily resistance that tuberculosis is infrequent. In patients of refinement, food properly served with all the accessories of a good table aids digestion.

The physiologic weight of a patient may be established by consulting standard tables, but due allowance should be made for the individual whose actual normal weight may be above or below the average physiologic standard. This may be determined by studying the weight of his parents, grandparents or other members of his family, as well as by observing his general morphology, muscular and osseous systems. A short man with a large and capacious thorax, short legs and well-developed muscles and bones should weigh more than one of the same stature with delicate bones, small musculature and a small, flat chest, deficient in capacity.

In tuberculosis there is a strong indication for overfeeding, but it should never be forgotten that increased intake of food is not synonymous with hypernutrition, and may cause indigestion. It is equally true that an increase in weight, strength or the quality of the blood is not possible if the total amount of food consumed per diem is less than normal.

There has gradually accumulated evidence proving conclusively that hyperfunctioning thyroid, adrenal or pituitary glands exert a marked influence over cellular digestion or metabolism. This is especially true of the thyroid, which, in conjunction with the adrenals, is able to make quickly available the sugar stored in the musculature, as well as to stimulate oxidation. Per contra, hypofunctioning ductless glands markedly interfere with metabolism.

Nutrition, from the cellular standpoint, is intimately bound up with the idea of a normal or abnormal increase or decrease in the digestive power of the individual cell. As the end products of gastro-intestinal digestion are transmitted to the cells of the body by the plasma, it is evident that metabolism is favorably or unfavorably influenced by a good or defective circulation, and therefore measures directed towards securing normal circulation benefit nutrition. Defective activity of the skin, kidneys or liver likewise harmfully influence metabolism by allowing retention of the waste products of the blood for a longer period than normal. Advice directed towards increasing the functional activity of these excretory organs benefits nutrition. From this viewpoint a deficiency in the daily supply of water is detrimental, as it has long been known that a moderate increase in the consumption of water stimulates these organs of excretion, and also favors the prompt removal of cellular waste, thus aiding metabolism, while a deficiency in the supply of water often causes constipation, which favors the production and subsequent absorption of chemic irritants from the colonic content, which interfere with digestion, the function of the liver and metabolism. It is surprising how many patients drink less water than the body requires. The average daily excretion of urine should be one ounce per kidney per hour, and that amount of water should be ingested. Ordinarily an individual should drink not less than one quart of water daily, a half pint before each meal and at bedtime, in addition to the water taken in tea, coffee, milk or food. Obviously the amount of water required in summer is greater than in winter.

So far as the individual patient is concerned, we should be sure that the teeth are in good condition from the standpoint of mastication, and that the patient be taught the importance of thorough and complete mastication, and in this connection no attention whatsoever should be paid to any statement that the patient may make. Most patients solemnly assure you that they masticate perfectly, when inspection of the teeth shows that it is mechanically impossible. Advice regarding mastication is usually ignored from forgetfulness or carelessness. Good mastication necessitates thorough insalivation. Filthy mouths may cause decomposition and fermentation of food consumed. It is evident that if the teeth are missing or maloccluded, normal mastication is impossible. Moreover, it is plain that when pyorrhea or dental sepsis exists that toxemia or septicemia from this cause will neutralize efforts directed toward improving the nutrition. In many cases a test meal should be given under physiologic conditions and the gastric content removed fractionally or in one hour, and occasionally it may be necessary to repeat this examination. Usually the gastric juice is deficient in hydrochloric acid, though the fermentative acids may be in excess. Pepsin is ordinarily normal or subnormal in amount. The feces should be examined, more especially to determine whether they contain an excess of proteids, carbohydrates, indol or the acids of fermentation. A barium meal should be given in order to determine by the roentgen ray the motor power, peristalsis, size, shape and position of the stomach, and also the time required for the head of the barium column to reach the cecum, the colon and the rectum, likewise observing peristalsis, the position of the cecum, hepatic flexure, transverse colon and splenic flexure. Not infrequently the stomach empties itself with abnormal slowness. Gastric, cecal and colonic ptosis are not uncommon, and when associated with atony, fecal stasis is usual and may be confined to the cecum, but more usually involves the hepatic flexure and transverse colon. Occasionally kinks, diverticuli, redundancy or adhesions of the large intestines are observed. Frequently, when constipation is present, with normal stomach and intestines, it is due to impaired or absent rectal reflexes, in consequence of long continued disregard of the impulse to defecate, which normally occurs when feces enter the rectum.

If there is gastric hypomotility, it is unwise to give food at short intervals, and digestion will be aided by local measures directed toward relief of this condition as by means of draughts of hot water at appropriate intervals, or by lavage. If the acids of fermentation are present, more particularly lactic or butyric, the latter being intensely irritant, a preliminary treatment to overcome this condition is necessary. Under these conditions it is well to remember the beneficial influence of draughts of hot water, which may be alkalinized by bicarbonate of sodium, the avoidance of food stagnation, or the introduction of yeast plants by way of fresh bread or vinegar. Lemon juice is an excellent substitute for vinegar, and yeast plants in bread may be avoided by the use of the crust of well baked bread, thin slices of bread thoroughly toasted or unsweetened zwieback. When achlorhydria exists, it is obvious that meats are digested with great difficulty and may decompose in the colon. When hyperchlorhydria exists milk is apt to disagree from the formation of a tough, hard clot which, in passing through the intestine, acts as an irritant. The digestion of carbohydrates is also rendered difficult, and they are prone to fermentation, more particularly if the excess of hydrochloric acid be sufficient to cause varying degrees of pylorospasm, which in turn causes food stagnation.

The treatment of these varying gastric states consists in the removal of the cause. The drug treatment of hypomotility is by the tincture of nux vomica; of achlorhydria, by an excess of sodium chlorid and the tincture of nux vomica, and by two or three drams of liquid pepsin, twenty minutes before each meal; and of hyperchlorhydria by the use of one-half pint of cold or hot Vichy (Celestin) one and one-half hours before each meal and at bedtime. If the hyperchlorhydria resists treatment and more especially if constipation coexists, two ounces of Russian or olive oil at bedtime may be of benefit, provided the stomach is empty.

Coloptosis with good motility produces no symptoms, but if atony exists, constipation or fecal stasis is usually present. If the colonic content represents the product of complete digestion, and no undigested food be present, toxemia of intestinal origin may not occur, even though the feces remain for more than twenty-four hours. If undigested proteids be present, the putrefactive organisms will form indol, which, uniting with oxygen, forms indoxyl, which when absorbed into the blood forms indoxyl sulphate of potassium, which is excreted in the urine as indican. On the other hand, if there exist carbohydrate excess and fermentative organisms, fermentative acids will be formed which cannot be detected in the urine, but may be discovered by examining the feces. It is to be remembered that butyric acid and sulphureted hydrogen are poisonous. An excess of lactic acid may be detrimental.

These observations clearly demonstrate the practical importance of frequent urinalyses to determine the presence or absence of indican, which in turn indicates the absorption of putrefactive substances from the colon, which may be overcome by diet, diminishing the proteid intake, the administration of aids to digestion, such as pancreatin and colon lavage with hot normal salt solution and the administration of calomel and phosphate of sodium. If fermentative acids be present in the feces, it is necessary to diminish the intake of carbohydrates, more especially starches, administer diastase and employ colon lavage. Colon lavage, as ordinarily administered, resolves itself into washing out of the rectum and sigmoid. The rectum and sigmoid should be emptied of its contents in the morning after breakfast by means of an enema, and afterward a soft rubber colon tube should be introduced and three pints of hot normal salt solution be allowed slowly to pass through the colon to the cecum, where its presence will be revealed by a splash. After massage of the colon its contents should be promptly evacuated.

The problem of managing digestion in pulmonary tuberculosis should also be considered from the standpoint of the location and extent of the tuberculous process, as well as its duration, stage and latency or activity. These factors are more readily appreciated when one contrasts early tuberculosis affecting a small area in one apex with advanced tuberculosis and cavity formation affecting both lungs. The former may be very slightly progressive and afebrile, and the latter rapidly progressive and accompanied by fever.

In an average ordinary afebrile slowly progressive pulmonary tuberculosis, after the broad general views already mentioned have been given due consideration, advice should be given as to food, which should be taken thrice daily and so far as possible conform to the individual tastes of the patient. Each meal should be of about equal nutritive value. Forced feeding, as ordinarily employed, usually does more harm than good, and Dr. Gildea of Colorado Springs, who yearly saw many cases of pulmonary tuberculosis from different parts of the United States, told me that the majority of patients required a preliminary treatment of from two to four weeks before they recovered from the effects of severe intestinal toxemia due to forced feeding.

It is recognized that an increase in weight is usually desirable in phthisis, but when abnormal weight has been obtained from forced feeding it is easily lost when the patient returns to a normal diet. If the amount of food daily consumed is insufficient because of slow digestion, poor appetite, or other causes, it is wiser to postpone giving radical advice regarding diet until a complete knowledge of the patient has been secured by observations extending over a period of from one to two weeks. Under ordinary circumstances the food of each meal should be so arranged that a proper balance is maintained between the proteins and the carbohydrates, and later an effort should be made to secure gradually a slight excess in proteins. The nutritive value of each meal should be gradually increased until the daily total approximates 3,500 or more calories. Importance is attached to the generous use of eggs, which may be soft boiled, poached or raw. The digestion of eggs is not interfered with by milk or cooked cereals taken at the same meal.

The mouths of many patients contain accumulations of fermenting and decomposing food particles, mucus and epithelium lodged in the gums, about the teeth or on the tongue, which should be removed before each meal by the vigorous use of the toothbrush, precipitated chalk and dental floss; otherwise these fermentative and putrefactive organisms admix with the food and begin at once the process of fermentation or decomposition.

Pure milk possessing a low bacterial count is an ideal and invaluable food, and is usually well digested by most patients, but not infrequently it is necessary that it be given at first, in small and gradually increasing quantities until the digestive juices of the patient adapt themselves to a food to which he may be unaccustomed. Occasionally it is necessary to substitute temporarily diluted, skimmed, predigested milk or kumiss. When hyperchlorhydria exists, and has been removed by proper treatment, milk or skimmed milk may be well borne when previously it had caused indigestion. If cream be not fresh it may contain butyric acid and therefore becomes an irritant, causing indigestion. Occasionally cream may be taken with benefit in ascending amounts at bedtime. The emulsifying and digestive power of pancreatin should not be forgotten in this connection.

The quantity of hydrochloric acid necessary for digesting meat is sufficient to form a tough and indigestible clot, if milk be taken with a meal containing meat. The combination of milk and meat is frequently the unrecognized cause of indigestion or intestinal toxemia. It is therefore usually desirable that one of the three meals should consist of a good, rich meat soup, roast or broiled mutton or beef and the usual vegetables, but milk should be avoided. A breakfast composed of two or more eggs, a sufficient quantity of thoroughly cooked cereal, to which may be added an abundance of milk or cream and as much sugar as desired, with bread and butter, is a palatable, easily digested meal, balanced as to proteins, starches and fats and of sufficient caloric value. Not infrequently a similar meal may be taken at supper and occasionally fish, oysters or sweetbreads may be substituted for eggs in order to give variety, thus increasing zest for food. That popular Italian dish, well cooked spaghetti, should be used more frequently, when digestion permits, and the addition of a small quantity of cheese enhances its already high nutritive value.

Special mention may be made of well cooked rice, which is perhaps the most digestible of the starches, and baked potatoes. Although celery, lettuce, spinach and string beans possess low caloric values, they contain substances essential to good nutrition. Grapes may be taken with a meal such as that suggested for breakfast. Oranges should be taken an hour before breakfast or as dessert at dinner. If grapefruit is preferred to orange, half of a small one, not too acid, may be permitted. The quantity of juice in a large grapefruit is excessive. A baked apple makes an excellent dessert for dinner or supper. A raw apple occasionally disagrees, although it is sometimes serviceable after dinner as a dessert.

All benefits from dietetic treatment may be lost if the food is in a bad condition or improperly cooked. Upon one occasion the mysterious cause of recurring attacks of indigestion was traced to cooking utensils in the crevices of which were allowed to remain fatty substances which had undergone butyric acid fermentation in the hot kitchen and contaminated all food thereafter placed in these vessels. The evils following the consumption of partially spoiled fish, meats, eggs or vegetables are self-apparent.

It is to be remembered that the human digestive organs possess remarkable adaptability, and that in the beginning as few changes as possible should be made in the food to which the patient is accustomed, and later slowly and gradually change the diet so that it meets the needs of the individual patient. It must also be remembered that if a neurotic patient thinks a desirable and easily digested food causes indigestion this may be an idiosyncrasy, although usually it is an obsession. The mere statement that objection to a desirable food is imaginary is usually unconvincing, and a persistence of the fixed idea is sufficient to cause indigestion.

The general principles governing the management of digestion in pulmonary tuberculosis are more easily and successfully applied to early phthisis. In advanced tuberculosis, associated with mixed infection, considerable fever, emaciation, weakness, marked disturbance of digestion and metabolism, each meal should be composed of but few articles of food, simple in character, easily digested; and it is often desirable to recommend small quantities at frequent intervals. We are usually compelled to rely chiefly upon milk or one of its preparations, eggs, toast and clear meat soups.

My efforts have been directed mainly toward pointing out a few of the more obvious considerations that must be kept ever in view when one attempts to fulfil one of the cardinal indications in the treatment of pulmonary tuberculosis, i. e., hypernutrition.

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PRACTICAL VALUE OF IMMUNOLOGICAL METHODS IN DIAGNOSIS*

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It is the object of this communication to present briefly an opinion of the value of immunological methods in diagnosis, in so far as these have a practical application in medical and surgical practice, and without discussing their value in relation to purely investigative or research work.

Immunological methods are concerned almost entirely with antibodies as they are present not only in the serum of the blood but also in the cerebrospinal fluid and such transudates and exudates as may accumulate in the pleural and abdominal cavities. Serological methods, on the other hand, have a broader scope and, indeed, may be accepted as including any method or test employing blood serum, cerebrospinal fluid, transudate or exudate and including not only immunological methods as those of agglutination and complement fixation, but also cytological and chemical examinations.

Immunological methods in diagnosis are confined to those diseases known to be caused by certain bacteria or protozoa and they depend on the presence of certain antibodies or reactionary substances to the respective microparasite in the body fluids. As a rule these methods are based on the general law that antibodies are usually specific for their antigen; one notable exception, however, is found in the complement fixation test for syphilis, when the antigen may be an extract of a normal or nonsyphilitic tissue. Furthermore, group reactions are commonly encountered in immunologic methods due to the interaction of antibodies with antigens which are closely related biologically and chemically, as, for example, precipitin reactions with the serum proteins of closely related animals or agglutination and complement fixation reactions with antigens of closely related bacterial or other proteins.

Until one or more of the various known antibodies are present in sufficient amount in the body fluids, immunologic methods are of no value in the diagnosis of disease; accordingly an interval of time must elapse after infection before these methods are available, which greatly limits their practical value in the early diagnosis of many infections. For this reason, bacteriological examinations are usually to be first thought of, as in the diagnosis of syphilis by the demonstration of *Treponema pallidum* in the secretions of the primary lesion, or of typhoid fever by blood culture. It is readily understood, however, that the more delicate, accurate and finely balanced is our technic the sooner may the antibodies come within the range of detection and facilitate an early laboratory diagnosis of practical value. For this reason every effort should be made to learn the fundamental laws underlying these reactions and the sources of error, while striving to increase the delicacy and specificity of the technic. While the element of error is ever present in all human activities, it may creep into immunologic technic with special readiness, due not only to lack of sufficient experience, accuracy and manipulative skill on the part of the worker but to properties and changes in what may be called the biological reagents or components of the test. Notable examples of this statement are the reports showing variation in the results of Wassermann tests with the same serum in different laboratories. In my opinion these variable results are due primarily to variation in the antigens employed in different laboratories and, secondarily, to error in manipulation or lack of sufficient skill in conducting the test. Indeed, at the present day it would be a source of great surprise if the results were uniform; the greatest value of these investigations has been to emphasize the need of further researches tending to increase the delicacy of the Wassermann reaction, limiting the sources of error and leading ultimately to the development and adoption of a standardized technic of proven value. Unfortunately, however, these reports have strongly impressed many members of the medical profession with the idea that the Wassermann reaction is of no value, and, indeed, may be dangerously misleading. In our opinion this is greatly to be regretted, as the reaction stands without a peer among immunologic methods as possessing great practical value.

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* From the McManes Laboratory of Experimental Pathology of the University of Pennsylvania.

*Prepared and presented by invitation for the meeting of the West Branch of the Philadelphia County Medical Society, Nov. 21, 1916.

Immunologic methods are generally conducted with known antigens and with these a search is made for the antibody or antibodies in the body fluids. For example, in the Widal reaction a known antigen composed of a culture of *Bacillus typhosus* is used to determine the presence or absence of agglutinin in the blood serum; or in the gonococcus complement fixation reaction a known antigen of gonococci is used to determine the presence or absence of a complement absorbing antibody in the serum. On the other hand the technic may be reversed and a known immune serum containing a known antibody or antibodies used for the detection and identification of the unknown antigen. For example, a known antityphoid serum containing typhoid agglutinin is frequently employed for the identification of the typhoid bacillus recovered from the feces or urine of a person suspected of suffering with typhoid fever or carrying the bacillus.

While immunological methods are frequently employed in the diagnosis of bacterial or protozoon infections, they have also found an application as tests for immunity response to active immunization and as a guide to therapy. For this purpose the agglutination test is frequently employed after active immunization with typhoid vaccine. The practical value of the reaction in this connection consists solely in demonstrating whether or not the vaccine has been sufficiently active to stimulate the body cells to produce typhoid antibodies. As a gage of this response the agglutination test possesses some value; and while the agglutinin itself has no direct destructive effect on the typhoid bacillus it is probably concerned in the preparation of the bacilli for the process of bacteriolysis or phagocytosis. In an analogous manner the Schick diphtheria toxin test is a direct determination of the presence or absence of natural diphtheria antitoxin in the body fluids, and may also be used for determining the response of the body cells in producing antitoxin after active immunization with the toxin-antitoxin mixtures of von Behring.

Likewise the Wassermann reaction has one of its greatest values as an index to treatment on the basis that a persistently negative Wassermann with delicate technic is an index of cure, while a persistently positive reaction is an indication of the presence of active spirochetes somewhere in the tissues.

In this paper it is obviously impossible to review in detail the more recent advances in immunity and immunologic technic. I shall attempt, however, to express a general opinion on certain immunological reactions as based on personal investigations and a review of the available literature bearing on the subject.

While the majority of immunological tests are conducted in test tubes, two are conducted in living persons or animals, namely, anaphylactic skin tests and the diphtheria toxin reaction of Schick.

It is the consensus of opinion that the Schick toxin reaction for immunity in diphtheria has proved of practical value for determining the presence of natural diphtheria antitoxin in the body fluids of persons and experimental animals, or after active immunization with toxin-antitoxin, or passive immunization with antitoxin alone. The percentages of positive and negative reactions of persons of various ages are somewhat different in the figures reported by various investigators, but the sum total of practical experience shows that a properly conducted test yielding a negative reaction indicates an immunity to diphtheria, whereas a positive reaction indicates an absence of sufficient protection.

Anaphylactic skin tests are proving of considerable value in detecting hypersensitiveness not only to bacterial proteins, as those of *Bacillus tuberculosis* and *Treponema pallidum*, but also to horse serum or other animal proteins, as egg albumin and the flesh of lower animals and various foods of animal and vegetable origin. Likewise they are of value in detecting hypersensitiveness to such vegetable proteins as those concerned in hay-fever due to the pollens of various plants, ivy poisoning and other toxic dermatoses. As a general rule the intracutaneous injection of the protein under study yields a more delicate reaction than the mere application of the protein to an abrasion of the skin. While these anaphylactic skin reactions indicate that the body cells are, or have been, stimulated by the respective animal or vegetable protein, and thereby serve as diagnostic tests for the presence of these foreign proteins, they are not to be accepted at present as an expression of immunity to infection or reinfection with the particular protein, although it is entirely probable that the presence of a state of anaphylaxis to a certain protein, as, for example, to that of the tubercle bacillus, indicates the coexistence of true antibodies in certain persons. I have elsewhere given[1] a more complete account of the mechanism and clinical value of anaphylactic skin tests; here it may be stated that in my opinion they possess distinct diagnostic value for the detection of that protein or proteins, bacterial or otherwise, that may prove harmful to a particular person on enteral or parenteral administration.

Anaphylactic tests for the detection and differentiation of blood stains, meats and other animal or vegetable proteins, are to be classed as practical diagnostic procedures, employing the guinea-pig sensitized to a particular protein as the test animal, or, indeed, such tests in vitro by the graphic method of Dale, employing an excised sensitized muscle, may be utilized.

Recently Force and Beckwith[2] have established on a practical basis the differential diagnosis of smallpox and chickenpox by immunizing rabbits with material from the two diseases, and using them for diagnostic purposes by the intracutaneous injection of material from the lesions of a patient presented for diagnosis. A rabbit sensitized with smallpox protein will react only to an injection of smallpox material and not to that material derived from a person suffering with chickenpox or other infection.

The practical value and limitations of the Widal agglutination test in the diagnosis of typhoid fever are too well known to require further comment. Agglutination tests are also of value in the diagnosis and differential diagnosis of infections due to other bacilli of the typhoid-colon group and, as previously stated, as an index of some value to the immunizing response following the administration of typhoid vaccine. Recent investigations by Broadwell and the author,[3, 4] Zinsser and Hopkins[5] and others have shown the presence of agglutinin for cultures of *Treponema pallidum* in the sera of syphilitic persons and immunized animals, and I am of the opinion that later researches may show that this agglutination test possesses some slight diagnostic value in certain obscure cases of syphilitic infection.

The value of the agglutination test in the diagnosis of the serological type of pneumococcus found in pneumonia and other pneumococcus infections, as worked out by Cole and his associates,[6] is proving of value in the serum treatment of lobar pneumonia with specific immune serum, and without which this form of treatment is greatly handicapped.

Agglutination and hemolysin tests are also of great value preliminary to blood transfusion, and if time permits it is generally accepted as good practice to conduct these tests and select that donor whose serum is free of agglutinin and hemolysin for the cells of the recipient, and whose cells are not agglutinated or hemolyzed by the recipient's serum.

Although a large amount of work has been done with the opsonins in disease, it is the consensus of opinion that the determination of the opsonic index has less practical significance than was originally believed. Aside from the 10 per cent. of chances of technical error in making an opsonin measurement, other factors may be present that are entirely beyond control and cannot be measured, and that may seriously affect the value of the opsonic index. As a diagnostic measure the opsonic index possesses some value in skilful hands, but as a routine measure and guide in vaccine therapy the method has fallen into disuse.

Precipitin reactions have not found a wide field of usefulness as practical diagnostic procedures except in the detection and differentiation of various animal proteins, as blood stains and the flesh of various animals, when the sera of rabbits highly immunized with these various proteins are used in the detection of the unknown protein. Various precipitin or precipitating reactions in syphilis and with cerebrospinal fluid, transudates or exudates in the diagnosis of syphilis, tuberculosis and other infections have proved so far of limited practical value.

Of all practical immunological reactions, and one probably most widely used and abused, that of complement fixation in syphilis stands in first place. Just as the tuberculin reaction constitutes the most marked and constant anaphylactic phenomenon, so likewise the Wassermann reaction may be regarded as the most marked and widely studied and used complement fixation test. Originally based on the assumption that it was a specific antigen-antibody reaction, this reaction has passed through many trials, and, as previously stated, I am under the impression that both its value in diagnosis and as a therapeutic guide are underestimated by many physicians. While it has been definitely proved that the antigen in the reaction need not be an extract of syphilitic tissues, and that, indeed, superior antigens are likely to be extracts of normal tissues, and that the reaction is, therefore, not biologically specific for syphilis, yet, practically, it is a highly specific reaction, and particularly in this country, where yaws and leprosy, the two diseases which, in addition to syphilis, may yield positive Wassermann reactions, are entirely unknown or relatively uncommon. Several years of constant study of this reaction, with particular reference to the question of antigen, has convinced me that the greatest source of error and variation in results is due to variation in the qualities of the antigen. In addition to this source of error, the reaction is frequently entrusted to improperly trained persons, who lack sufficient technical skill and the ability to prepare and standardize the respective biological reagents and differentiate between those which are acceptable and those which are poor and likely to yield false results in either a positive or negative way.

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[1] Kolmer, J. A.: The Mechanism and Clinical Significance of Anaphylactic Skin Reactions, Bull. Johns Hopkins Hospital (in press).

[2] Force, J. N., and Beckwith, H. L.: A Laboratory Method for the Diagnosis of Smallpox, Jour. A. M. A., 1915, lxv, 588.

[3] Kolmer, J. A.: Concerning Agglutinins for Treponema Pallidum, Jour. Exper. Med., 1913, 18, 18-24.

[4] Kolmer, J. A., and Broadwell, S.: Agglutination of Treponema Pallidum in Human Syphilis, Jour. Exper. Med., 1916, xxiv, 333-344.

[5] Zinsser, H., and Hopkins, J. G.: Antibody Formation Against Treponema Pallidum—Agglutination, Jour. Exper. Med., 1915, 21, 576-583.

[6] Cole, R.: Pneumococcus Infection and Lobar Pneumonia, Arch. Int. Med., 1914, 14, 56-93.

Extensive experience with the Wassermann reaction and with various antigens and particularly with the skilful clinical cooperation of my colleague, Dr. Jay F. Schamberg, has convinced me of the great diagnostic value of this reaction, and especially with antigen reenforced with cholesterin. The clinical value of this reaction is not so striking in secondary syphilis or other forms in which the clinical diagnosis is readily made, but in the primary and latent or tertiary stages, when the clinical manifestations may be obscure or entirely absent. Likewise the superiority of cholesterinized antigens is not apparent with sera containing a large amount of syphilis antibody or "reagin," but with those sera containing small amounts of "reagin," as from cases of latent or tertiary syphilis, syphilitic mothers and children, and in persons who have received considerable, but insufficient, treatment. I am convinced that it is a serious error to regard a person as cured of syphilis on the basis of a negative Wassermann reaction, employing an alcoholic extract of syphilitic liver as antigen. The majority of these antigens are not sufficiently delicate and parallel tests with cholesterinized extracts show the presence of positive reactions and thereby indicate that further treatment should be given with the understanding that it is entirely possible and probable that in the majority of cases a persistently negative reaction with these sensitive antigens will be attained. The Wassermann reaction is not too delicate; rather, as ordinarily conducted, it is not delicate enough, and further efforts in this direction tending to increase its delicacy while guarding against nonspecificity is much desired. In this connection I may state that the Hecht reaction as modified by Gradwohl[7] is somewhat more delicate and is of particular value in a negative way, that is, a negative Hecht-Gradwohl reaction being better immunological evidence of the absence of syphilis or its cure than a negative Wassermann reaction.

While the gonococcus complement fixation test is a specific antigen-antibody reaction, its practical applications are much more limited. In a general way this complement fixation test possesses a greater positive than negative value The highest percentages of positive reactions are found in arthritis and pyosalpingitis of gonococcus origin. In these two diseases a negative reaction possesses considerable value as indicating that the infections are of nongonorrheal origin; likewise a person suffering from a gonococcus infection, who has reacted positively and later, after treatment, persistently negatively, may be regarded as cured, but a negative reaction alone cannot be accepted as indicating the absence of gonococcus infection if other symptoms and signs are present.

More recently complement fixation tests have been revived and employed in the diagnosis of tuberculosis by Besredka,[8] Bronfenbrenner,[9] Craig,[10] Miller,[11] and others. It would appear that the consensus of opinion is to the effect that complement fixation in tuberculosis is of value as indicating active lesions, and as an aid in the diagnosis of early tuberculosis, in the detection of the obscure and latent lesions and as a guide in prognosis, as the reaction loses its intensity of fixation as the patient progresses toward recovery. My own experience with this reaction, employing polyvalent suspensions and autolysates of tubercle bacilli as antigens, with the clinical cooperation of Dr. Charles M. Montgomery, has not yielded me results quite as encouraging as those reported. In our experience a number of persons with active lesions yielded negative reactions and the antigens yielded some positive reactions with the sera of actively syphilitic persons who presented no clinical evidences of tuberculosis.

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[7] Kolmer, J. A.: The Hecht (Gradwohl Modification) Complement Fixation Reaction in Syphilis, Jour. Immunology, 1916, ii, 23-37.

[8] Besredka: Compt. rend. Acad. d. Sci., 1914, clvi, 1633.

[9] Bronfenbrenner, J.: Proc. Soc. Exper. Biol. and Med., 1914, xi, 92. Also Bronfenbrenner, et al., Arch. Int. Med., 1916, 17, 492-507. (This article also contains a good review of the literature.)

[10] Craig, H.: Amer. Jour. Med. Sc., 1915, cl, 781.

[11] Miller, H. R.: The Clinical Value of Complement Fixation in Tuberculosis, Jour. A. M. A., 1916, lxvii, 1519-1521.

Complement fixation reactions have also proved of practical value in veterinary practice in the diagnosis of glanders and contagious abortion of cows and mares. The reactions are likewise of value in the detection and differentiation of various proteins and particularly those of animal origin, as blood stains and the flesh of various animals.

It is with considerable hesitation that I approach a discussion of the ferment reactions, and particularly the Abderhalden reaction in the diagnosis of pregnancy, cancer, syphilis and other conditions. Following the work of Williams and Pearce,[12] showing the nonspecificity of the pregnancy reaction, numerous reports have substantiated their findings, so that at the present time there is but slight stress placed on the practical diagnostic value of these tests. It is my opinion that the reaction, properly and rigidly conducted after the method of Abderhalden or with the modification of Bronfenbrenner,[13] possesses value in a negative way and may under these restricted conditions possess some practical value in selected cases. I am convinced that the specific digestive power of the serum for a certain protein may be increased in pregnancy and other conditions, and that further efforts similar to those of Bronfenbrenner,[13] and Saxon and White[14] should be made to improve the technic of the reactions. Investigations based on the results obtained with Van Slyke's method have shown quite conclusively that the ferments are not specific or not increased in pregnancy and other conditions, but according to our own results[15] this method is not sufficiently delicate to warrant a final opinion and that the subject is worthy of further studies in a purely investigative or research manner.

Finally, it may be stated that the practical diagnostic value of immunological reactions is very limited to those physicians who regard the laboratory report as final or who expect the laboratory to make for them a definite and final diagnosis, irrespective of the clinical aspects of a given case. Laboratory tests in general and immunologic methods in particular are likely to prove of most value to those physicians who are acquainted with their possibilities and limitations, who are informed of advances as they are made, and in close touch with laboratory workers possessing sufficient skill and initiative to submit new tests to thorough and painstaking trial, and who bring to bear on their work skill, patience and a certain degree of research inquisitiveness. Entire separation of clinician and *laboratorist* greatly limits the development and value of laboratory methods and investigations, while intelligent cooperation and the open mind facilitates the development of this as other branches of medical science.

It is greatly to be regretted that in this country at least physicians are perfectly willing to submit laboratory work to persons improperly qualified and prepared. While the majority of physicians select their consultants with the idea of proficiency and skill uppermost in mind, the same criteria are often lacking in the selection of those to whom is entrusted laboratory investigations of no mean importance and practical value. This negligence or indifference on the part of the profession has fostered a spirit of commercialism and inefficiency which has done much to hinder the real advance and application of immunological methods in the diagnosis and management of disease.

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[12] Williams, P. F., and Pearce, R. M.: Surg. Gynec. and Obst., 1913, xvi, 411.

[13] Bronfenbrenner, J.: On the Present Status of the Abderhalden Reaction and of the Theory of the So-Called Abwehrferments, Jour. Lab. and Clin. Med., 1915, 1, 79-112.

[14] Saxon, G. J., and White, C. P. (Personal communications).

[15] Kolmer, J. A., Asnis, E., and Freese, A. M.: Experimental Studies in Tissue Ferments (to be published).

THE ANATOMY, PHYSIOLOGY AND PATHOLOGY OF THE BLOOD VASCULAR SYSTEM

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The blood vascular system is a complicated closed system of contractile elastic tubes arranged so as to allow continuous flow of blood in one direction, and also to allow certain variations of the current. The blood is kept in perpetual motion, and this is necessary because of the low oxygen capacity of the blood, as it contains only enough oxygen to sustain the vitality of the organs a few minutes. Blood circulates under pressure and this is called blood pressure. The total volume of blood is a fixed quantity, but the capacity of the vessels is a very variable one. In life the vessels are more or less contracted through vital activity, and so much is this contractility that the vessels are stretched to hold the blood.

The propelling force of the blood is directly or indirectly the heart plus certain subsidiary phenomena. The heart is a pump. Fluid finds its way into it and it is forced from it by positive pressure. It works intermittently, and its movements are such that the mean or average flow of the blood into the vessels and through the vessels remains practically constant.

The blood vessels, particularly the arterioles, capillaries and venules, are capable of undergoing marked active and passive variation in caliber, thus affecting their capacity and resistance and quality of blood flowing through them at a given period of time.

Changes in the caliber of vessels at a local or circumscribed area tend to localize the pressure, resistance, velocity and volume of the current of that area. This may be affected without any apparent change on the circulation as a whole. The volume of blood flowing through the vessels, other things being equal, is as the square of the diameter of the vessels.

FUNCTION OF THE BLOOD

A. Plasma is (1) antitoxic (by that I mean in the plasma are substances which neutralize toxins that are made by bacteria or other cells); (2) globulicidal; (3) bactericidal; (4) a carrier of nutritive matter to various tissues; (5) a carrier of effete matters which result from metabolic activity; and (6) is a power as a solvent. (7) By virtue of being a circulating fluid it serves as a medium of heat distribution. (8) In the plasma solution, we find large numbers of substances which are functionally of importance. The proteins, for instance, serve for nutrition purposes.

The sugar in the blood is used by the muscles to a great extent. It has inorganic salts by which certain osmotic properties are given to the blood, also important in certain physiological processes.

B. Red blood corpuscles or erythrocytes consist very largely of hemoglobin, plus a stroma or capsule. They are: (1) a carrier of oxygen (during passage of blood through the lungs and skin they take up oxygen and give it off as they go through the tissues; they do not become saturated with oxygen, and only partly oxidized; there is only a partial loss of oxygen); (2) a carrier of nutritive materials; (3) a carrier of carbon dioxid. (4) erythrocytes possibly transfer noncoagulable proteins into coagulable proteins. (5) It is possible that they take some part in clotting. (6) When red blood corpuscles undergo disintegration they furnish hemoglobin, which is altered to form biliary and urinary coloring matters. Iron is stored up in the liver for the purpose of making new hemoglobin.

C. Leukocytes (1) serve to maintain the proper composition of the blood, especially in reference to proteins; (2) possible aid in absorption of, and changes in, certain products of digestion; and (3) may be metaplastic; that is, a reserve of living protoplasm utilized in repair. (4) Certain of them are phagocytic in character; (5) they secrete toxins to kill or impede different substances; (6) take part in coagulation; and (7) probably yield elementary granules to the blood.

HEART

The heart is a hollow organ with muscular walls and conical in shape. It is placed obliquely within the middle mediastinum, so that its basal portion is directed backward and slightly to the right, while its pointed apex looks downward, forward and to the left. One third of the organ is in the right and two thirds in the left half of the thoracic cavity.

The base or posterior surface of the heart is placed in front of the middle portion of the dorsal segment of the vertebral column. The apex approaches the anterior wall of the thorax, and in life the cardiac impulse will be felt beating in the fifth intercostal space of the left side, one and one-half inches below the nipple and three and one half inches from the middle line. The inferior surface is flattened, looks downward, rests on the diaphragm, the pericardium alone intervening. Immediately below is the upper surface of the liver, and in front and to the left is a small piece of the stomach.

The anterior superior surface looks upward as well as forward, and lies behind the greater part of the gladiolus of the sternum and the third, fourth, fifth and sixth cartilages of both sides. Owing to the greater projection of the organ to the left, only a small portion of the inner ends of these cartilages lies in front of the heart on the right side.

The auricular part of the heart stands in marked contrast with the firm ventricular portion. Its walls are thin and flaccid. The whole of the posterior surface of the base of the heart is formed by the auricles. It sends upward and forward two processes or cornua, termed the auricular appendices. A deep concavity or hollow is thus produced in which lie the two great arterial trunks which spring from the ventricles; namely, the pulmonary artery in front and the aorta behind.

The Right Auricle.—The interior surface of the cavity presents a polished appearance, due to its endocardial lining. In the auricular appendix the wall is raised into a series of closely applied parallel muscular ridges, called musculi pectinati, from their resemblance to the teeth of a comb. These ridges are also present on the right wall of the auricle, and when followed backward they all seem to end on a smooth vertical ridge called the crista terminalis.

The blood enters the atrium of the auricle by the following openings: (1) The opening of the superior vena cava; (2) the opening of the inferior vena cava; (3) the opening of the coronary sinus; (4) the orifice of three or four cardiac veins from the surface of the right ventricle; and (5) foramen thebesii.

The blood flows out of the cavity into the right ventricle through the large ariculoventricular opening.

The orifice of the superior vena cava is situated at the upper and back part of the auricle and the aperture is devoid of a valve.

The inferior vena cava opens into the lower part of the cavity, and has the rudimentary eustachian valve in relation to its orifice. These veins are so directed that the currents of blood which flow from them into the auricle shall not be opposed the one against the other.

On the partition which separates the two auricles from each other is an oval depression, surrounded by a prominent ridge, a short distance above the mouth of the inferior vena cava. This is the fossa ovalis. It marks the position of the foramen ovale of the fetal heart.

Right Ventricle.—Its wall is thickest at its upper part. With the exception of the infundibulum, from the summit of which the pulmonary artery arises, the inner surface is rendered extremely irregular by the projection of a lace work of fleshy ridges, called columnæ carneæ; the three forms are (a) simple elongated ridges, (b) fleshy slips or trabeculae free throughout the greater part of their extent, but fixed to the wall by their two extremities, (c) conical fleshy projections of considerable size, which project into the cavity and are attached by their bases only. These last are called musculi papillares and are arranged to form an anterior and posterior set. The free ends of each of these muscles give origin to several delicate threadlike tendons, the chordæ tendineæ, and by these they are brought into connection with the segments of the auriculoventricular valve. A transverse fleshy band springs from the base of the anterior papillary muscle and stretches across the ventricular cavity to the septum. This is called the moderator band. By fixing the yielding anterior wall of the ventricle to the more solid septum it is said to prevent overdistention of the cavity.

There are two openings in the right ventricle situated at the base: (1) Auriculoventricular, and (2) the pulmonary, through which the blood passes into the pulmonary artery. Both openings are guarded by valves, which act so as to give the blood its proper direction through the heart. The valve which guards the mouth of the pulmonary artery is composed of three semilunar segments, and is called the semilunar or sigmoid valve.

The right auriculoventricular or tricuspid valve is composed of three triangular pointed membranous segments termed cusps (infundibular, septal, marginal) which project into the cavity. Attached to the ventricular surface and margins of each segment as well as into the circumference of the auriculoventricular opening are several of the choridæ tendineæ which as previously said take origin from the apices of the papillary muscle. As a result the ventricular surface of the valve is rough, while the auricular surface, that surface over which the blood flows, is smooth.

The pulmonary artery is a short, wide trunk, two inches long. At the lower aspect of the aortic arch it divides into the right and left branches, the former being longer and larger. They enter the hilus of the right and left lungs respectively.

Left Ventricle.—Here the musculi pectinati are confined entirely to the appendix. On the posterior wall are the four openings of the pulmonary veins, two of which come from each lung, conveying the oxygenated blood to the heart. The openings are devoid of valves.

Left Ventricle.—Here the musculi papillares with their attached chordæ tendinæ are collected into two strongly marked groups. They are much larger than the papillary muscles of the right ventricle, but do not project so distinctly into the cavity. The left ventricle has two openings: (1) the auriculoventricular opening through which the blood enters from the auricle; and (2) the aortic orifice. Both openings are guarded by valves: the auriculoventricular opening by the mitral or bicuspid valve consisting of two large pointed cusps, plus two smaller portions intervening. The segments are larger and thicker than in the right. The cusps are known as the anterior or aortic cusp, which is the larger, and the posterior or marginal cusp. To both of these the chordæ tendinæ are attached.

The aortic valve consists of three segments and are semilunar in form, attached by their convex margins around the opening. Their free concave edges project into the lumen of the vessel. Three little pockets are thus produced. In these pockets, or sinuses of Valsalva, the orifices of the coronary arteries are found. The right artery springs from the anterior sinus, while the left artery springs from the left posterior sinus.

FUNCTION OF THE HEART

During life the blood is driven through and from the heart by means of successive rhythmical contractions and dilatations of its walls, but the entire heart does not contract simultaneously. First the auricles contract together and this is succeeded by the contraction of the ventricles; in other words, the auricular contractions correspond to the ventricular dilatations and *vice versa*. But again there is a period immediately preceding the auricular contraction during which the entire heart is at rest, and this is called the period of cardiac rest. These three conditions of the walls of the heart, namely, (a) cardiac rest, (b) the auricular contraction, (c) the ventricular contraction, follow each other consecutively and without intermission, the one after the other, and they are collectively termed a cardiac revolution.

During the periods of cardiac rest the auricles are filling. Blood is flowing into the right auricle through the openings of the superior vena cava, inferior vena cava and the coronary sinus, and into the left auricle through the orifices of the four pulmonary veins. A portion of this blood trickles through the auriculoventricular openings into the ventricles; but the blood is passing into the auricles in greater quantity than it is trickling into the ventricles, and the result is distention of the auricles.

The second stage of the cardiac revolution now takes place, namely, the auricular contraction. The auricles contract sharply and suddenly and the blood is forced through the auriculoventricular orifices into the ventricles. But how is it that the blood during this contraction does not regurgitate into the veins, the mouths of which are devoid of valves? For the simple reason that the contraction begins at the venous orifices and auricular appendices and travels toward the auriculoventricular openings. The ventricles are now full and the third stage of the cardiac revolution takes place; namely, the ventricular contraction. The ventricles contract more slowly and more deliberately than the auricles and the blood is discharged into the pulmonary artery and into the aorta. Regurgitation of blood through the auriculoventricular openings into the auricles is prevented by the apposition of the segments, of the tricuspid and bicuspid valves, and when the ventricular contraction ceases, regurgitation from the arteries into the ventricles is prevented by the semilunar valves being thrown across the arterial orifices.

The segments of the auriculoventricular valves are retained in position and prevented from being forced upward into the auricle, during the ventricular contraction by the musculi papillares and chordæ tendineæ. As the ventricular wall in its contraction to a certain extent advances toward the auriculoventricular opening, the musculi papillares in their contraction retreat from it and keep the tendinous cords tense, never allowing them to slacken. When the contraction of the ventricles ceases and the vis a tergo is removed from the blood the recoil of the expanded elastic wall of the artery exerts a pressure on the column of blood. Its backward flow is prevented by the filling of the pouches of the semilunar valve.

Pathological conditions of the heart may be classified as follows: (1) Hypertrophy caused by abnormality of valves and of heart wall, alteration of specific gravity of blood and of elasticity of muscle power of vascular system, constancy of posture and lack of physical exercise, faults in lungs and chest, Bright's disease, physical exercise (overexertion), pregnancy. (2) Atrophy caused by senility and wasting conditions including starvation, passive congestion. (3) Fatty degeneration caused by suboxidation, anemias and states of undernutrition, toxemias represented by acute infections and poison as phosphorus and arsenic. (4) Mucoid degeneration, of which myxedema is the best example. (5) Hyaline degeneration develops in the walls of the coronary arteries as part of a sclerotic process. (6) Fatty infiltration caused by excessive ingestion of hydrocarbons. (7) Amyloid infiltration, especially due to syphilis and tuberculosis. (8) Calcareous infiltration, the terminal stage of chronic sclerotic valvulitis. (9) Embolism of coronary arteries. (10) Thrombosis of the coronary vessels. (11) Hemorrhage. (12) Inflammations as (a) acute endocarditis, simple or benign, warty or verrucose, or infectious, malignant or mycotic (vegetative or ulcerative); and (b) chronic endocarditis. (13) Acute myocarditis, either acute parenchymatous (cloudy swelling plus inflammation), or acute circumscribed interstitial; and chronic interstitial myocarditis (chronic sclerotic or indurative), either diffuse or local (result of healing of infarcts). (14) Pericarditis may be secondary to acute infectious diseases, acute articular rheumatism, scarlet fever, pneumonia, etc.; pyemia and other septic conditions; extension from contiguous structures; primary or idiopathic; traumatism; cold. It may be (1) acute: either (a) dry (cat's tongue pericardium), or (b) plastic (bread and butter) later becoming cor villosum or hairy heart, or with effusion or purulent. The pulse may be of the type pulsus paradoxus (during inspiration becoming small or entirely disappearing, reappearing during expiration). Pericarditis may be chronic, caused by chronic diseases, rheumatism, gout, syphilis, Bright's disease, and may have two forms: in localized areas, fibrous or sclerotic; and fibrous adhesions (local or general), binding the two surfaces (chronic adhesive pericarditis) later possibly obliterative. (15) Hydropericardium or hydrops. (16) Pneumopericardium. (17) Tuberculosis of the heart. (18) Syphilis of the heart. (19) Tumors of the heart are rare (fibromata, myxomata and rhabdomyomata of the myocardium and polyps of the endocardial surface). Malignant tumors are secondary; carcinomata are rare; sarcomata more common, especially lymphosarcomata, developing in the glands at the base and extending to the heart wall. Endotheliomata are found at times in the pericardial tissue.

In sclerosis of the coronary vessels a condition known as angina pectoris is supposed to be produced. This disease is not clearly understood, but it is believed to be produced by faulty nutrition of certain portions of the myocardium brought about at periods of great stress. It is a well known fact that the majority of cases of angina pectoris show chronic interstitial myocarditis and coronary sclerosis. The condition manifests itself in a paroxysmal manner with intense pain of a gripping nature, irregular heart action, marked palpitation, more or less circulatory failure, and collapse. The symptoms may at least be explained on theoretical grounds. At times of especial cardiac stress certain areas of the wall fail to receive adequate blood supply and as a result a tonic spasm is set up. This appears analogous to the transitory spasmodic condition seen in horses with sclerotic femoral arteritis. The spasm is presumed to cause pain by pressure on the sensory filaments in a way similar to muscular cramps. The irregular heart action and palpitation are probably the result of the spasm. Duration varies from a few minutes to several hours.

Adams-Stokes' disease or syndrome is a condition in which slow and irregular heart action develops at times with unconsciousness and collapse. A condition known as heart-block is noted. The disease is believed to be produced by a fibrosis of the auriculoventricular muscle band known as the bundle of His. On either side of the heart this forms a communication from the musculature of the auricle to that of the ventricle and in some manner this bundle seems to regulate the contractions and relaxations of the chambers. Fibrosis of the bundle appears to interfere with this function and thus heart-block is explained. Experimental compression by the auriculoventricular septa in dogs has resulted in heart-block.

ARTERIES

Diseases of the arteries may be divided as follows: (1) atrophy; (2) hypertrophy; (3) fatty degeneration; (4) hyaline degeneration; (5) amyloid infiltration; (6) calcareous infiltration; (7) acute arteritis, either of intima, media or adventitia, and may be primary thrombo-arteritis, acute proliferative or productive, or acute infectious (suppurative); (8) arteriosclerosis (chronic sclerotic arteritis) with which certain diseases are associated; namely, gout, syphilis, chronic plumbism, chronic Bright's disease, tuberculosis, chronic arthritis, and which is affected by senility, laborious work, and persistent use of alcohol, tobacco and coffee. The effects of arteriosclerosis are: (a) It diminishes elasticity of the arterial walls by interfering with proper muscular action. This imposes more work on the heart. (b) A reduction in the vascular intima serves to interfere with the blood current, adding more work on the heart, and as a result the heart hypertrophies with gradual development of chronic aortic valvulitis. (c) The pulse becomes small and hard and high blood pressure is noted. Cirrhotic and degenerative changes take place in different organs, and later degeneration and general metabolic disturbance with failure of different functions. Anemia and emaciation ensue. (d) Thrombosis may develop. An embolus may become impacted in some part of the system, and when the coronary circulation is no longer adequate for needs of the heart, dilatation develops together with passive congestion of the viscera, etc. (9) Tuberculosis and syphilis are found.

ANEURYSM

Localized dilatation of an artery produced by the distending force of the contained blood and causing more or less stretching of the walls at some point of acquired or natural weakness. The aneurysm may be sacculated, fusiform, cylindroid or cirsoid, and either true or false, gross or miliary.

Points of Predilection. (1) The arch of the aorta is the commonest situation. The column of blood is ejected by the left ventricle in a spiral manner and there are special points which receive an excess of pressure. (2) Those vessels that are poorly supported by the tissues are likely to show dilatation. This is seen in the popliteal artery. Arteries of the brain are poorly supported on account of the presence of perivascular lymph spaces. (3) Aneurysms are seen at the branching of arteries, in the thoracic and abdominal aortas and in the innominate, carotid and femoral arteries.

PATHOLOGICAL CONDITIONS OF VEINS

These may be divided as follows: (1) Acute phlebitis; (2) chronic phlebitis, the causes of which are the same as those pertaining to the diseases of the arteries; (3) varicose veins, caused by (a) cardiac weakness, (b) general circulatory failure, (c) interference in either the pulmonary or portal circulation.

HEART

The apex beat normally to be found about one inch below and two inches to the sternal side of the left nipple is due (1) to the recoil of the left ventricle as it empties its contents into the aorta, (2) to the lengthening of that vessel as the blood enters it, (3) to the consequent straightening of the arch (carrying the heart forward), (4) to the absence of any interposed lung tissue over the area of absolute dulness.

The apex beat (and usually the heart itself) is (a) raised in cases of ascites, tympanites, large abdominal tumors and atrophic pulmonary conditions; (b) depressed in aortic aneurysm, mediastinal growths, pulmonary emphysema, pleural effusion and hypertrophy or dilatation of the left ventricle; (c) displaced laterally to the right by left pleural effusion, splenic tumors, hypertrophy of the right ventricle; to the left by hepatic tumors, right pleural effusion, hypertrophy of the left ventricle. The heart may be drawn to either side by contracting pleural adhesions.

As the area of absolute dulness, "superficial cardiac area," corresponds to that portion of the cardiac substance which is not separated by pulmonary tissue from the thoracic wall, it follows that its extent varies inversely with the size or expansion of the lungs. In emphysema the area of cardiac dulness may quite disappear; in the later stages of fibroid phthisis it may be much larger than normal.

In relation to the anatomy of the valves and cavities of the heart, the sounds produced by the passage of blood through them should be considered in connection with at least a few of the modifications caused by the chief pathological changes that affect that organ. It may be said here for the sake of clearness that the first sound occurs during the contraction of the ventricles when the auriculoventricular openings should be closed by the mitral and tricuspid valves and the aortic and pulmonary orifices should be open, and that it is due to (a) the shutting of the valves, and (b) the impulse of the apex against the thoracic wall, with possibly some addition from (c) the contraction of the walls and ventricle.

The second sound occurs during the auriculoventricular dilatation and is due to the closure of the pulmonary and aortic semilunar valves caused by the recoil of the blood current brought about by the elastic coats of the aorta and pulmonary arteries.

If a murmur heard over the chest is synchronous with the radial pulse (systolic) it occurs during ventricular contraction and is usually due either (1) to regurgitation of blood through an auriculoventricular valve that does not accurately close the corresponding opening, or (2) to an obstruction to the exit of blood from the ventricle at the aortic or at the pulmonary orifice. If a heart murmur is not synchronous with the radial pulse (diastolic or presystolic), it may be caused by (1) obstruction to the passage of blood from an auricle into a ventricle (mitral or bicuspid stenosis), or (2) regurgitation from the pulmonary artery or aorta into the right or left ventricle (pulmonary or aortic insufficiency). Of these various murmurs, those due to mitral and aortic insufficiency are by far the most frequent.

Valvular disease of the left side of the heart (90 per cent. of all cases) is more frequent on account of the greater work required of this side and the associated greater liability to strain, which is rarely sudden, usually trifling but often repeated.

Mitral insufficiency is an imperfect closure of the segments of the left auriculoventricular valve causing a systolic murmur heard best (a) over the apex and superficial cardiac area because there the ear can most nearly approach the left ventricle without the interposition of the pulmonary tissue or of the right ventricle; (b) in the axilla because it is transmitted in the direction of the arterial current; and (c) at the angle of the left scapula or between the fifth and eighth thoracic vertebræ, for the same reason and because at that point the left ventricle is posterior. In addition, the pulmonary second sound is louder and sharper than normal (accentuated), because of the following series of occurrences, which should be studied in connection with the structures and cavities involved: (1) overfilling and distention of the left auricle, (2) imperfect emptying of the pulmonary veins, (3) pulmonary congestion, (4) resistance to the systole of the right ventricle, (5) increased fulness of the pulmonary arteries and corresponding increase of the backward pressure on the pulmonary valves, shutting them more sharply and forcibly (acentuation). Furthermore, as the distention of both ventricles results in hypertrophy, the transverse diameter of the area of cardiac dulness is distinctly increased.

In mitral stenosis (often associated with some degree of mitral insufficiency), a murmur is usually heard, preceding the pulse beat (presystolic); that is, corresponding to the auricular systole as the left ventricle is distended from imperfect emptying; hence the pulmonary arteries, veins, and the right heart are in the same condition, and there is a loud accentuation of the second sound.

Aortic insufficiency is characterized by a murmur that follows the radial pulse (diastolic) and occurs as the blood is being driven back into the ventricle by the elastic aorta. It is heard best over the sternal end of the second right intercostal space of the sternum and is more rarely heard in the carotid or axillary vessels; i. e., as it is a murmur primarily due to the reflex of the blood from the aorta into the ventricle, it is in accordance with well-known laws of physics transferred in the direction of the current causing it.

The great distention and subsequent hypertrophy of the left ventricle caused by its inability to empty itself results in a marked increase of pericardial dulness. As the aortic valves do not come together normally the aortic second sound is feeble or absent.

Aortic stenosis (much less frequent than insufficiency) is usually accompanied by a synchronous murmur heard at the aortic cartilage and transferred along the great vessels to the axilla, to the neck, and along the spine, but difficult to distinguish from similar murmurs caused by disease of the inner coat of the aorta or by mere roughening of the valves. As the aorta receives a diminished quantity of blood, one factor in the production of the apex beat is lessened in effectiveness and the cardiac impulse is often also lessened. Dilatation and hypertrophy of the left ventricle with subsequent secondary changes in the other cavities may follow, but are not nearly so marked as in aortic insufficiency.

The various forms and degrees of hypertrophy and dilatation of the heart which are associated with the foregoing conditions can be readily understood by considering the increased resistance and corresponding increased exertion which are brought about by the valvular changes. The essential cause of hypertrophy in the heart, as in other muscles, is increase of work. The etiological factors which necessitate this should be studied in connection with the anatomy of the heart, and have been well summarized by Osler.

> Hypertrophy of the left ventricle alone or with general enlargement of the heart is brought about.
>
> *A. Conditions affecting the heart itself:* (1) Disease of the aortic valve, (2) mitral insufficiency, (3) pericardial adhesions, (4) sclerotic myocarditis, (5) disturbed innervation with overaction as in exophthalmic goiter, in long continued nervous palpitation or as the result of the action of certain articles, such as tea, alcohol and tobacco. In all these conditions the work of the heart is increased. In the case of the valve lesions the increase is due to the increased intraventricular pressure; in the case of the adherent pericarditis or the myocarditis it is due to direct interference with the symmetrical and orderly contraction of the chambers.
>
> *B. Conditions acting on the blood vessels:* (1) General arteriosclerosis with or without renal disease; all states of increased arterial tension induced by the contraction of the smaller arteries under the influence of certain toxic substances; (2) prolonged muscle exertion, which enormously increases the blood pressure in the arteries; (3) narrowing of the aorta as in congenital stenosis.

Hypertrophy of the right ventricle is caused by (1) lesions of the mitral valve, either incompetence or stenosis, which act by increasing the resistance in the pulmonary vessels, (2) pulmonary lesions with obliteration of any considerable number of blood vessels within the lungs, such as occurs in emphysema or cirrhosis, (3) valvular lesions on the right side, occasionally and not infrequently in the fetus, (4) chronic valvular disease of the left heart and pericardial adhesions.

Dilatation and enlargement of the right ventricle frequently causes a depression and forward displacement of the left lobe of the liver and the appearance of a pulsating mass in the epigastrium.

Dilatation of the auricles is more likely to produce serious compression of surrounding structures than it is of the ventricles because of the greater fixation of the heart at its upper portion where the auricles are placed. Enlargement of the left auricle has in some cases produced compression of the left bronchus, with consequent collapse of the lung. Enlargement of the right auricle seems to be the basis of the frequently occurring right-sided hydrothorax of valvular heart disease. Compression of the azygos vein, and perhaps of the veins and lymphatics at the root of the right lung by the enlarged auricle, accounts for the occurrence of one-sided hydrothorax.

Rupture of the heart is (1) usually secondary to fatty degeneration of cardiac muscles; (2) may follow complete embolic obstruction of one of the branches of coronary arteries, and is (3) favored by atrophy, caused by arteriosclerosis. (4) With these predisposing causes rupture may follow unusual exertion, heavy falls or direct violence to precordium or it may occur spontaneously. The right side of the heart is more frequently involved, the right auricle especially; then the left ventricle, left auricle, right ventricle. The order probably results from the facts that (a) the right auricle is the weakest part of the heart; (b) the left ventricle, though normally the strongest part, stands second because it is especially liable to the myocardial degeneration that results from coronary arteriosclerosis, (c) the left auricle and the right ventricle though weaker than the left ventricle are less affected because they are not so liable to such degeneration.

A wound of the heart is not necessarily fatal; in 40 per cent. of such cases the patients recover. A stab wound may be followed by little or no hemorrhage owing to the anatomical arrangement of the muscular fibers, some of which, whatever the direction of the wound, escape division. The thicker the cardiac wall at the site of the wound the more numerous the fibers and the more effective their action in preventing hemorrhage; hence, wounds of the auricles are more certainly and more rapidly fatal than wounds of the ventricles, and wounds of the right ventricle are graver than those of the left.

The anterior surface of the heart is most frequently wounded. The overlapping of the pleura leads to its usual involvement in wounds of the heart or pericardium except those that reach the latter through those areas of the sternum with which they are in direct relation. Accordingly in most heart wounds a pleural cavity (commonly the left) is found to contain blood; as the anterior margin of the lung is apt to be involved except when the wound is within the bounds of the area of cardiac dulness, the blood in both the pleural and pericardial cavities may be frothy.

PORTAL SYSTEM

The portal system is composed of all the veins which have their origin in the walls of the digestive tract below the diaphragm (rectum excepted) and includes also the veins which return the blood from the pancreas, spleen and gallbladder. It presents a marked peculiarity in that the system begins and ends in capillaries, the blood which it contains having entered its constituent veins from the capillaries of the intestine, stomach, and other organs mentioned above, and passing thence to the liver, where it traverses another set of capillaries by which it reaches the hepatic veins and so the heart. Coming as it does principally from the intestine, the portal blood is more or less laden with nutritive material, which has been digested and absorbed through the inner walls, but is not yet in a condition, so far as some of its constituents are concerned, suitable for assimilation by the tissues. To undergo the changes necessary for its conversion into assimilable material, it is carried by the portal vein to the liver, and as it passes through the capillaries of that organ it undergoes the necessary modifications.

The consequences of portal obstruction are various, but may as a rule easily be understood by referring each symptom to its anatomical basis in obstruction of one or the other of the venous tributaries.

The chief results are: (1) Enlargement of the liver itself, at first congestive, later from hyperplasia. Diminution in the quantity of bile or alteration in its character may cause constipation and indigestion, or escape of its coloring matter and its absorption by the hepatic veins may give rise to jaundice. (2) From congestion of the gastric and intestinal mucosa (through the superior and inferior mesenteric, splenic and gastric tributaries), there may develop indigestion, flatulence, eructations and vomiting which is often bloody; serous exudation into the bowel; intestinal indigestion and diarrhea sometimes with black stools from decomposed blood; or exudation into the general peritoneal cavity; ascites, enlargement and tenderness of the spleen; hemorrhoids (from the communication) between the middle and inferior hemorrhoidal veins (systemic) and the superior hemorrhoidal vein (portal); varicosities in the lower extremities possibly from the same communication between the caval and portal systems, but oftener from direct interference, by an enlarged liver, with the current in the inferior cava.

922 North Third Street.

THE PENNSYLVANIA MEDICAL JOURNAL

Published Monthly **Official Organ of the Medical Society of the State of Pennsylvania**

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Athens, Pa., October, 1917

THE PITTSBURGH SESSION

While the war conditions increased the problems of the Committee on Scientific Work in arranging the program, there were fewer authors and discussers "not present" at Pittsburgh than at the session last year, and the program throughout the general meetings and the four sections was of a high grade. The minutes of these meetings and sections will appear in our next issue.

The war interfered also with the attendance, and yet there were 890 registered as against 615 at Scranton last year and 1379 at Pittsburgh in 1914. The attendance at the sections was good and the new Section on Pediatrics made an excellent beginning.

On the whole, the Pittsburgh Session was fully up to the successful annual gatherings held by our society. Owing to the fact that so many of our members are in the service of our country, some of them already at the front, it was deemed advisable to omit most of the usual social functions. The death of Dr. Ewing, chairman of the Committee of Arrangements, and the sickness of Dr. Walter Donaldson who at the last moment took his place added to the embarrassment of the occasion but the efficient work of Drs. Thorne, Cameron, Westervelt, Mayer, Gould, and other local physicians made our members feel that they were heartily welcome in Pittsburgh.

ENTERTAINMENTS AT PITTSBURGH

By common consent the usual entertainments were omitted at the Pittsburgh session on account of war conditions. It was the intention of the Committee on Arrangements, however, to have the usual reception for the president elect, but on account of the unfortunate illness and absence of Dr. Dixon the reception was omitted. Instead of social affairs, the three evening meetings were devoted to the development of the subject of war needs and patriotism.

On the first evening Dr. C. A. E. Codman delivered a stirring address appealing with great power to those who had not yet enlisted. This was followed by a group of moving pictures of British and French war scenes. These pictures had just been released by the government and were of intense interest.

The next evening a patriotic pageant was shown, which, with the stirring music of Nirella's Band, created great enthusiasm. On this occasion there were four speakers. Dr. Franklin Martin told in his clearcut way, what the Council of National Defense is doing; he also referred with clinching arguments to the danger in supporting peace movements at the present time, and made clear the necessity of supporting the government in every possible way. Dr. Victor C. Vaughan made the speech of the evening, full of wisdom, anecdote, and almost oratorical at times, on the exigencies of the war and its demands on the medical profession. Dr. Drinker spoke on peace plans after the war. The climax was reached by an old-fashioned war oration on "America's Responsibility" by the Hon. James Francis Burke, wonderfully delivered and enthusiastically received.

On the last evening Dr. Graham Lusk delivered a very instructive lecture on the conservation of food, which was well attended by many of the club women of Pittsburgh.

J. M. T.

THE WEDNESDAY EVENING MEETING AND PAGEANT

The patriotic note sounded in the evening meeting of Tuesday was continued in the open session of Wednesday evening by a concert of patriotic music, both orchestral and vocal. The ballroom of the William Penn Hotel was well filled with physicians in attendance at the convention and many of their invited guests, both men and women. It was inspiring to notice the many uniforms in evidence among the doctors.

With Dr. J. M. Thorne, president of the Allegheny County Medical Society, in the chair, the meeting proper was opened with prayer by the Rev. Robert MacGowan, D.D., followed by a short address by Henry Sturgis Drinker, LL.D., president of Lehigh University, who spoke in his capacity as chairman of the Pennsylvania Branch of the League to Enforce Peace. After reminding his audience of the eminence of its presiding officers, including ex-President Taft, he urged, in contradistinction to Washington's slogan, "In time of peace prepare for war," that we as a nation in time of war prepare for peace. The flags which adorned the walls, the patriotic strains, which still echoed in the ears of the audience, together with the evidence of khaki and olive drab led one to paraphrase a once famous joke and murmur, "first catch your peace."

Following Dr. Drinker's address a patriotic pageant was presented. This pageant had been arranged by Dr. H. C. Westervelt of Pittsburgh and presented at the summer outing of the Allegheny County Medical Society in June of this year, as a stimulus to the recruiting spirit among the local doctors. Its repetition had been asked for and, with some alterations and improvements, it was presented to this most appreciative audience. The room was suddenly darkened and the notes of fife and drum were heard playing "Yankee Doodle," and through the great door, midway of the room, came a group illustrating the well-known picture called "The Spirit of '76," the battered Colonials, one with bandaged, bloody head, one with straggling white locks falling on his shoulders, the old-fashioned drums and quaint fifes, carefully following the picture; a brilliant "spot" light threw the group into strong relief, and it was easy to read the banner borne behind them, on which a picture of Washington crowned the words "The Spirit of '76 *Made* the Nation." The group marched to the platform and took its place, while in at the door came a second group to the tune of "Marching Through Georgia." These men were real veterans of the Civil War (McPherson Post No. 157, G. A. R.), carrying battered flags and banners which bore evidence to their fiery baptism in battle. A banner bearing Lincoln's sad, strong face was borne behind them with the inscription "The Spirit of '61 *Saved* the Nation." Then the band played the national air of brave Belgium, and a Belgian boy, but clad in his Scout suit of khaki, and wearing a sash of the Belgian red, black and yellow, bore in the Belgian flag amidst the cheering audience; next came a Frenchman, bearing the tricolor of glorious France while the band played the Marseillaise, and again the audience cheered; then the Russian flag, borne by a sturdy Russian (of the staff of the Russian Consul), and the flag of Great Britain, borne by a Corporal of the British Army, wearing his full uniform, and an Italian flag borne by a native-born Italian. As each entered the national air of the country represented was played by the band and the spot light followed the flag from its entrance, down the aisle, to the platform. Last of all, to the crashing strains of "Star Spangled Banner," came Uncle Sam, a statuesque figure, full of dignity in his gorgeous red, white and blue and high beaver hat; behind him marched marines, jackies and enlisted men of the regular army in their service uniforms, and the members of the Roentgen ray class of the Medical Officers Reserve, in uniform; in this group was borne a banner showing a portrait of President Wilson and bearing the motto "The Spirit of '17 Will Make the World *Safe* for Democracy." When the whole pageant was grouped upon the stage, and the light, now red, now white, now blue, had shown it off to its best advantage (a striking scene not easily forgotten), Uncle Sam stepped to the front and, being not only Uncle Sam but a vocalist of extraordinary ability, sang the "Star Spangled Banner" in which the enthusiastic audience joined, the whole effect being one of the heartiest and most stimulating patriotism.

The Chairman, Dr. Thorne, then introduced Dr. Franklin Martin, medical member of the Advisory Commission, Council of National Defense. Dr. Martin, who was called to Washington from Chicago, a striking figure in his uniform, spoke briefly, and with authority, on the preparations being made by the Government for the prosecution of the war. He called the attention of the audience to the fact that for the first time in the history of the world a government had, in time of war, called on the medical profession for advisory duty. He warned the audience against being led to talk of peace with a long and difficult war still to be waged, and pointed out how such peace propaganda would be treated by the enemies' press, and used dangerously against our national well-being.

Dr. Victor C. Vaughan, late of Ann Arbor University, once president of the American Medical Association, now member of the National Research Council, made an eloquent and compelling speech on "The Duties of the Medical Profession in This War," and urged prompt enlistment on the part of all physicians and surgeons under 45. He spoke with convincing simplicity, his own son being in France and he himself in the uniform of the M. O. R. C.

These eminent members of the profession had plainly demonstrated that it was not necessary to go outside the medical men to procure both patriotism and oratory, but, in conclusion, the Hon. James Francis Burke, ex-congressman from the Pittsburgh district, spoke at length on "America's Responsibility," rehearsing the months when our "patience outweighed our patriotism," and arraying the rape of Belgium, the tragedy of the Lusitania, U-boat warfare, diplomatic intrigue, and from another standpoint our great debt to France as the reasons why a peace loving nation should rouse herself to strain every nerve to prosecute war.

The audience dispersed amid many kindly and enthusiastic comments. As remarked by a prominent member of the Philadelphia County Society, "Our hats are off to Pittsburgh."

F. L. B. W.

BUSINESS ENACTED AT PITTSBURGH

The full minutes of the House of Delegates will be published in the November issue. The *per capita* assessment for 1918 was fixed at $2.75, the same as for the present year. The House of Delegates and the Trustees unanimously decided that the *per capita* assessment for 1918 of any member in the actual service of the United States or her Allies should be remitted provided his annual dues are remitted by his county society.

All the officers were elected without contest. The only office for which there were two nominees was trustee for the first district, Dr. Wilmer Krusen, Philadelphia, and Dr. Ira G. Shoemaker, Reading, being nominated, but Dr. Krusen asked to have his name withdrawn and so avoided any contest. The list of officers will be found on advertising page vi. Three of the trustees being in actual service and two more having made application for commission in the Medical Officers Reserve Corps, it was thought best to accept the resignations of Drs. Appel, Lowman and Lazarus, valuable as has been their services.

THE COMMERCIAL EXHIBIT

One of the principal factors in the growth of medical science is the interchange of thought promoted by gatherings of physicians in various sections of the country. The recognition of the value to progress of an exchange of ideas has resulted in the formation of medical socities. Years ago physicians exhibited at meetings of their medical societies appliances and products which they had devised or invented. Later such products and appliances were taken up by skilled pharmacists and manufacturers who in turn followed the practice of attending meetings of physicians, and as the number of exhibitors increased it was found necessary to make special provisions for them. This formed the nucleus of what has grown to be known as the Commercial Exhibit, which today is of considerable magnitude and importance in connection with state and national association meetings.

That the advantages of a commercial exhibit to the medical profession are appreciated is evidenced by the attention given to it by physicians attending the annual session of the Medical Society of the State of Pennsylvania, and its value cannot be questioned, as it not only enables the doctor to see and examine many articles that he would not otherwise take the time to look into, and have new things called to his attention that might be overlooked, but it gives the leading representatives of prominent firms an opportunity of meeting their medical friends in a manner in which they could not be reached otherwise.

There is an advertising feature that leads many firms to build attractive booths and make handsome displays, and considerable pride is exhibited in obtaining this result. Exhibitors of this class have men present who are well posted in the lines which they represent and undoubtedly deserve consideration because of the up-to-the-minute thoughts which they present. Another class of exhibitors includes those who bring their wares, such as surgical instruments, different appliances, books, etc., for direct sale to the physician, thereby giving him an opportunity to make a personal selection from a large variety, which is particularly advantageous to the doctor that is located in country districts not readily accessible to large centers and supply points, and the whole arrangement seems to be satisfactory as, in return for privileges, the amount paid for space in the exhibit room materially aids the society in meeting its expenses.

For a number of years past, much of the success of the exhibits, displayed at the annual sessions of the Medical Society of the State of Pennsylvania, has been due to the management of Dr. William H. Cameron, who has given his able attention to the subject year after year, and, recognizing his worth and ability, the following resolution was drawn and signed by practically all exhibitors present:

Sept. 27, 1917.

> At the close of the Sixty-Seventh Annual Session of the Medical Society of the State of Pennsylvania, we, the undersigned representatives of commercial houses in attendance, desire to express our thanks and appreciation to Dr. William H. Cameron for courtesies extended and for his untiring energy in our behalf. And desire, furthermore, to assure him of our good will and friendship.

This year's session, although not as largely attended as many of the previous meetings, by reason of war conditions, was nevertheless a success from the standpoint of the exhibitor, and the expression of satisfaction was almost universal because of the particular attention given to it by the visiting physicians, and the opportunity of coming in contact with practically every visiting member of the society by reason of the fact that the meeting rooms and the commercial exhibit were on the same floor. This quite important fact has been overlooked in the past, but is of the utmost importance from the standpoint of the exhibitor, as there is always a considerable percentage of physicians who overlook the commercial feature unless it is so situated that they cannot possibly pass it by.

The limited time required of each member in personally visiting each display is always more than repaid, as it need not interfere with the sessions of the convention, and there is always some thought that will emanate from the poorest of us for the benefit of the best of us.

C. W. B.

IMPRESSIONS OF THE PITTSBURGH SESSION

So many medical men have enlisted in the army and other members of the profession are busy at home on account of our depleted ranks that it was thought the attendance at the Pittsburgh session might not be large. While some of the members of the society who expected to read papers or take part in the discussions were unable to attend, those of us who attended the meetings regularly felt well repaid for going to Pittsburgh. Several who had never been present before did not hesitate to state that in the future they would not be among the missing.

The public meetings held in the evenings were, of course, characterized by a large amount of military enthusiasm. The statement made by members of the Medical Reserve Corps that Pennsylvania stood at the head of the list in number of volunteers for medical service for the Federal Government was received with great enthusiam. The general enthusiasm and patriotism displayed by the members was most gratifying.

It would not be proper or possible to speak of all the interesting papers read or the discussions which took place at the various meetings of the Section on Medicine. Special mention should be made of the symposium on nephritis which took place on Wednesday afternoon. The members were particularly fortunate in hearing the papers of Drs. Henry A. Christian of Boston and Martin H. Fischer of Cincinnati. The whole symposium was a rare treat.

The joint meeting with the Section on Pediatrics, Thursday afternoon, was a new step for the society. The attendance was excellent, the discussion of papers active, and it seems reasonable to say that similar joint meetings will be held at subsequent sessions of the society.

While some members may have expressed disappointment on looking over the preliminary program, yet all with whom I talked after the session seemed gratified at its success, and the meetings of the section were well attended.

E. M. G.

REMEMBER THE BOYS IN SERVICE

Editors of county bulletins should keep track of the addresses of physicians from their locality who are in the service and send them the county society bulletin regularly and by first class mail. The boys may be busy and yet they will eagerly read the medical news from home. Put yourself in imagination in the place of one of them and think if there will not be some moments that may hang heavy.

This idea can be carried still farther. Encourage the sending of letters from proper parties, women and girls included, to all the soldier boys from your locality. When making a social call on a busy man who is a member of one of the draft boards he was found mimeographing a bunch of news items gathered by young ladies in his church. These he was sending by first class mail to each man or boy from his locality who had enlisted or been selected for his country's service. Such letters will go a long way toward relieving the monotony of camp life and will tend to keep the boys clean in their lives, which means much for present efficiency and future usefulness in the community in which they may locate after the war.

THE PHARMACIST IN THE ARMY

Physicians, dentists and veterinarians are officially recognized in the army as men of special training, but the pharmacist has no chance of becoming a commissioned officer. This is not a matter of mere honor or even of simple justice. The pharmacist as a private has not the influence that enables him to do the most efficient work. Mr. Edmonds on July 25 introduced in the House of Representatives House Bill No. 5531, providing for the establishment of a pharmaceutical corps. This bill has the approval of the Pharmaceutical Association of Pennsylvania and of prominent physicians and others throughout the country. Dr. F. E. Stewart, chairman of the Committee on War Defense, Pennsylvania Pharmaceutical Association, who may be addressed in care of H. K. Mulford Company, Philadelphia, will be able to give further particulars regarding this important measure.

In this connection the attention of our readers is called to the Owen Bill, Senate Bill No. 1786, providing for military rank in the medical corps of the army. In our Spanish War the losses from sickness far exceeded the casualties in battle, largely due to a lack of authority inherent in the low rank given our medical officers. Here again it is not a matter of mere honor or even of simple justice, but one of efficiency. A commissioned officer, soon after that war, told the writer that he saw a train of medical and sanitary supplies sidetracked in Georgia over the protests of the medical men on the ground, to give preference for a trainload of beer. The medical man in the British army has more rank and authority than in our own army, and yet the campaign on the Tigris River in Mesopotamia during and subsequent to the siege at Kut-el-Amara in 1915 and 1916, with its tragic result, led to the appointment of a special parliamentary commission. The report of the commission stated that there was lack of coordination and cooperation between the inspector general of communications and the medical service, that the military authorities treated the medical service without consideration, that the medical personnel and staff were deficient in numbers, and that the breakdown of the medical organization had a material effect on the morale of the troops. The *Medical Press and Circular* states that General Cowper threatened to put Major Robert M. Carter of the Indian Medical Service under arrest as a "meddlesome, interfering faddist" because he insisted on telling the facts and endeavoring to better conditions.

The Journal of the American Medical Association, in speaking of this, is "reminded of our own General Brooke who, at a time when there were 10,000 cases of typhoid fever in his division at Chattanooga, was 'annoyed' by the persistence of the medical officer in calling his attention to the infected water supply."

If these awful experiences are not to be repeated, the medical department of our army must have more influence and authority over medical and sanitary matters.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported up to October 3:

Allegheny County: *New Members.*—Harry J. Treshler, Homestead (by transfer from Beaver Couny Society); Joseph E. Willetts, Pittsburgh (by transfer from Philadelphia County Society). *Death.*—John McDonald Russell (Univ. of Pittsburgh, '12) in Pittsburgh, August 31, aged 45. *Removals.*—William A. Hodkinson from Crafton to 1366 Singer Pl., Wilkinsburg; Richard E. Poole from Castle Shannon to Puente, Calif.; Morris A Slocum from Etna to 401 S. Linden Ave., Pittsburgh.

Beaver County: *Transfer.*—Harry J. Treshler to Allegheny County Society.

Berks County: *New Member.* — Donald B. McHenry, Wernersville.

Blair County: *New Members.*—Harry B. Cunningham, Juniata; Frank Keagy, Altoona. *Removal.*—Andrew S. Stayer from National Soldiers Home, Wis., to National Home, Danville, Ill.

Bucks County: *Deceased.* — Joseph B. Walter (Univ. of Pennsylvania, '68) in Solebury, August 18, aged 76.

Cambria County: *Removals.*—Bennett A. Braude from Johnstown to 52 Arlington St., Newton, Mass.; Daniel P. Ray from Johnstown to Box 145, Tyrone (Blair County).

Center County: *Death.* — James A. Thompson (Jefferson Med. Coll., '78) in Port Matilda, September 1, aged 73.

Clarion County: *Removal.*—Sylvester J. Lackey from Limestone to Clarion.

Clearfield County: *Removal.*—Joseph W. Harshberger from Mahaffey to Stockport, Ohio.

Cumberland County: *New Member.*—J. Bruce McCreary, Shippensburg.

Dauphin County: *Removal.*—Percy E. Deckard from Harrisburg to Richfield (Juniata County).

Elk County: *New Member.*—Harry S. Falk, Emporium (Cameron County).

Fayette County: *Death.*—Levi S. Gaddis (Jefferson Med. Coll., '73) in Uniontown, August 31, aged 67.

Franklin County: *New Members.*—Joseph Enniss, David M. Shoemaker, Waynesboro. *Removals.*—Theodore Peters from Chambersburg to 920 Livede St., Norristown (Montgomery County); M. Webster Stofer from Chambersburg to Norwich, N. Y.

Huntingdon County: *Death.* — Rudolph Myers (Bellevue Hosp. Med. Coll., New York, '63) in Huntingdon, August 24, aged 77. *Removal.*—Robert B. Campbell from New Grenada (Fulton County) to Box 363, Mount Union.

Indiana County: *New Member.* — J. Gardner Kearney, Dilltown (by transfer from Jefferson County Society).

Jefferson County: *Transfer.*—J. Gardner Kearney to Indiana County Society.

Lackawanna County: *New Member.*—Louis Breskman, Dickson City. *Reinstated.*—Charles E. Thomson, Scranton. *Death.*—Arthur H. Bernstein (Jefferson Med. Coll., '91) in Scranton, September 29, from paralysis, aged 51. *Removals.* — J. Nelson Douglas from Scranton to Walton, N. Y.; William E. Keller from Scranton to City Hall, Sunbury (Northumberland County).

Lancaster County: *New Member.* — Lewis R. Rothermel, Denver.

Lawrence County: *New Member.* — Louis W. Grossman, New Castle. *Removal.*—Thaddeus C. Brown from New Castle to West Pittsburgh.

Luzerne County: *New Members.*—Albert J. Baker, Duryea; James A. Corrigan, Peter E. Fagan, Harry J. Owens, William C. Person, Hazleton; A. Dattner, Kingston; Edward M. Davis, Glen Lyon; Thomas R. Gagion, Wilkes-Barre; William S. Helman, Avoca; John A. Hilbert, Pittston; O. H. Parfitt, Nanticoke. *Removal.*—Patrick A. McLaughlin from Philadelphia to 214 Chestnut Ave., Kingston.

Lycoming County: *Death.*—Charles F. Wackenhuth (Univ. of Pittsburgh, '92) in Picture Rocks, recently, aged 56.

Mercer County: *Removal.*—Henry R. L. Worrall from Greenville to Pulaski (Lawrence County).

Montour County: *Removals.*—John H. Snyder from Washingtonville to Sunbury (Northumberland County); George A. Stock from White Haven (Luzerne County) to Eagleville Sanatorium for Consumptives, Eagleville (Montgomery County).

Northampton County: *New Member.*—Edgar R. Beidelman, Bethlehem.

Philadelphia County: *Transfer.* — Joseph E. Willetts to Allegheny County Society. *Deaths.*—Greene R. Hulsizer (Jefferson Med. Coll., '87) of Philadelphia, at his summer home in Delanco, N. J., August 31, aged 55; Edwin T. Robinson (Univ. of Pennsylvania, '00) in Philadelphia, September 5, following an operation, aged 45. *Removals.*—Claude A. Dundore from Ashland (Schuylkill County) to the Ritz-Carlton, Philadelphia; Mary G. Knowles from Philadelphia to c/o W. F. Pope, 19 Congress St., Boston, Mass.

Potter County: *Removals.*—A. C. Shannon from Titusville (Crawford County) to Brookville (Jefferson County); William H. Tassell from Coudersport to White Mills (Wayne County).

Schuylkill County: *Removal.*—John E. Beale from Coaldale to Lemoyne (Cumberland County).

Union County: *New Member.*—Edgar T. Shields, R. D. 2, Lewisburg.

Venango County: *New Member.*—Charles H. Brown, Franklin.

Warren County: *Removals.*—Michael V. Ball from New York to Warren; William P. Clancy from Warren to Clarendon.

Wayne County: *Removals.*—Charles G. Corson from Rileyville to R. D. 3, Honesdale; George W. McCafferty from Somerset (Somerset County) to Arrow (Somerset County); R. Watson McCafferty from Pittsburgh to 282 Jersey St., Buffalo, N. Y.

Westmoreland County: *New Member.*—Arthur B. Blackburn, Latrobe. *Death.*—John H. Ewing (Coll. of Phys. and Surg., Baltimore, '97) in Delmont, August 27, from cerebral hemorrhage, aged 44. *Removal.*—Robert L. Wilson from Jeannette to Hotel Dempsey, Macon, Ga.

York County: *Death.*—Benjamin F. Spangler (Jefferson Med. Coll., '68) in York, September 29, aged 73.

STATE NEWS ITEMS

MARRIED

Dr. Urban H. Reidt, Jeannette, and Miss Kathryn Donegan, Irwin, August 20.

Dr. Theodore E. Ingram and Miss Mary Summy, both of Marietta, August 29.

Dr. Leon Solis-Cohen and Miss Marian Mansbach, both of Philadelphia, September 30.

Dr. A. Lovett Dewees, Haverford, and Miss Margaret Dakin, Natick, Mass., September 15.

Dr. Alpheus McKibben, Pittsburgh, and Miss Constance Margaret Hartgering, Rapid City, S. D., August 22.

DIED

Dr. Harold H. Kynett (Univ. of Pennsylvania, '86) in Philadelphia, October 1, aged 55.

Dr. Patrick S. Boland (Illinois Med. Coll., Chicago, '09) in Carbondale, August 29, aged 44.

Dr. Samuel Wood Hunter (Univ. of Pennsylvania, '68) in Philadelphia, August 25, aged 73.

Dr. Isaac Meyer Birkey (Univ. of Pennsylvania, '65) in Newportville, August 16, aged 74.

Dr. Emerson K. Brundidge (Jefferson Med. Coll., '80) of Hazleton, in Bala, August 25, aged 74.

Dr. Jacob B. Heller (Univ. of Pennsylvania, '78) in Easton, August 19, from septicemia, aged 64.

Dr. George Miles Wells (Univ. of Pennsylvania, '85) of Wayne, in Annapolis, Md., September 26.

Dr. James Edward Smith (Maryland Med. Coll., Baltimore, '07) in Shenandoah, August 22, aged 35.

Dr. Edwin A. Curry (Univ. of Pennsylvania, '89) in Danville, September 6, from paralysis, aged 54.

Dr. John West Oldshue (Philadelphia Univ. of Med. and Surg., '81) in Pittsburgh, August 9, aged 69.

Dr. William J. Sharbaugh (Kentucky School of Med., Louisville, '91) in Altoona, September 2, aged 68.

BORN

To Dr. and Mrs. Henry B. Davis, Lancaster, a daughter, Margaret Elizabeth, September 26.

ITEMS

Dr. W. Rowland Davies, Scranton, has been elected president of the Craftmen's Club.

Dr. W. Wayne Babcock, Philadelphia, has been appointed chief surgeon of the base hospital at Fort McPherson, Atlanta, Ga.

Dr. Adolph Koenig, Pittsburgh, was on October 1 reappointed a member of the State Bureau of Medical Education and Licensure.

Dr. Clarence P. Franklin, Philadelphia, adjutant of the Allentown training camp, has been promoted from major to lieutenant colonel.

Dr. Adam L. Kotz, Easton, has resigned from the staff of St. Luke's Hospital, South Bethlehem, and has been appointed pathologist for the Easton Hospital.

The Woman's Medical College, Philadelphia, opened its sixty-seventh school year on September 19, with an increase of 50 per cent. in entrance enrolment.

Dr. Richard M. Pearce, Professor of Research Medicine, University of Pennsylvania, has been made director of the recently established bureau of medical service of foreign commissions of the American Red Cross.

Dr. Chevalier Jackson delivered the introductory address at the ninety-third opening of Jefferson Medical College, September 24, his subject being "How to Study."

Dr. Henry L. Orth, for twenty-seven years superintendent of the State Lunatic Hospital of Harrisburg, has resigned his position to take effect as soon as his successor can be appointed.

Capt. Theodore B. Appel, having completed a course of instruction in Indiana and in Oklahoma, is now at the head of an instruction school of Gas Defense at the Medical Officers' Training Camp, Fort Benjamin Harrison, Indiana.

The George F. Geisinger Memorial Hospital, Danville, built at a cost of $600,000, has now been endowed by Mrs. Geisinger for $1,000,000. A Scranton trust company has been named as trustee, the local board of trustees having been asked to resign.

Major George E. deSchweinitz, M. R. C., has been assigned to active duty at Philadelphia for the purpose of compiling a handbook in ophthalmology for the use of the surgeon-general of the army. On the completion of that duty he will report in person to the surgeon-general for duty in the division of ophthalmology, section of surgery of the head.

Inspection of Hotels and Eating Places in Philadelphia.—The State Department of Health has announced that arrangements have been completed between Commissioner Dixon and Director of Health Krusen of Philadelphia for special inspection of hotels and eating places in that city, with a view to more rigid enforcement of the law relative to sanitary conditions. Special attention will be paid to sanitary conditions of kitchens and the proper protection of food from flies.

Optometrical Act Defined.—Deputy Attorney General Emerson Collins, on October 3, replying to an inquiry of the secretary of the Board of Optometrical Education, defined several points in the optometrical act not understood by the newly appointed board. He settles definitely just how long each member of the board is to serve and what constitutes a "limited examination" as distinguished from "standard examination" as used by the act, saying that "it must be limited to the specific subjects enumerated."

Veterinarians in the Army.—Dr. G. J. Marshall, state veterinarian, Dr. B. M. Staley, head of the division of transmissible diseases, and Dr. William Brod, representative at Lancaster, have been granted leaves of absence by the state livestock sanitary board for the period of the war. Drs. Marshall and Staley have been commissioned in the veterinary corps of the United States Army as majors. Dr. Brod is a lieutenant. Dr. T. E. Munce, deputy state veterinarian, was made acting state veterinarian and the executive officer of the board during the absence of Dr. Marshall.

University of Pennsylvania Opening Exercises.—The University of Pennsylvania opened its 177th college year in Weightman Hall, September 28, with a student body much depleted by enlistments for the war. About 60 per cent. of the old students were missing, although the freshman class is larger than ever. The medical department has an exceptionally large entering class. In spite of the large number from the department who enlisted, the total enrolment of medical students is increased. A number of changes have been made. In the medical school, Drs. Joseph McFarland, Horatio C. Wood, Jr., John C. Heisler and Seneca Egbert have been added to the faculty. Dr. Allen J. Smith takes the place of Dr. William Pepper as dean.

Bright's Disease caused more deaths in Pennsylvania during June than any other disease, according to the report of Commissioner of Health Dr. Samuel G. Dixon. The total deaths for the month were 9,139, and the births numbered 18,567. The causes of death were as follows:

Typhoid fever	58
Scarlet fever	11
Diphtheria	87
Measles	54
Whooping cough	64
Influenza	34
Malarial fever	1
Tuberculosis of lungs	780
Tuberculosis of other organs	159
Cancer	540
Diabetes	76
Meningitis	100
Acute anterior poliomyelitis	2
Pneumonia	840
Diarrhea and enteritis, under 2 years	288
Diarrhea and enteritis, over 2 years	84
Bright's disease and nephritis	901
Early infancy	535
Suicide	101
Accidents in mines	88
Railway injuries	128
Other forms of violence	605
All other disease	3,603

Enlistment of the Teaching Force of the School of Medicine, University of Pittsburgh.—Forty-two per cent. of the teaching staff have enlisted in the medical service of the government. The following men are in Base Hospital No. 27: Surgery, Major Robert T. Miller, professor of surgery; Capt. Paul R. Sieber, assistant professor of surgery; Capt. Stanley S. Smith, assistant professor of ophthalmology; Capt. John R. Simpson, assistant professor of otology; Capt. Edward J. McCague and First Lieut. J. W. Robinson, instructors in surgery; Capt. Eben W. Fiske, demonstrator in orthopedic surgery; First Lieut. R. J. Frodey, instructor in gynecology; First Lieut. John H. Wagner, demonstrator in surgery; First Lieut. B. Z. Cashman, instructor in gynecology. Medicine, Major James D. Heard, professor of medicine; Major T. S. Arbuthnot, associate professor of medicine; Major Howard G. Schleiter, assistant professor of medicine; First Lieut. R. R. Snowden and First Lieut. A. H. Colwell, instructors in medicine; First Lieut. C. B. Maits and First Lieut. A. P. D'zmura, demonstrators in medicine. Laboratory, Capt. H. H. Permar, instructor in pathology; First Lieut. F. M. Jacob, instructor in immunology. Registrar, Capt. Edward W. Zur-Horst, demonstrator in medicine. The following men from the teaching staff have received commissions in the Medical Officers Reserve Corps: Drs. R. H. Boots, D. Hartin Boyd, Wade Carson, Ewing W. Day, A. W. Duff, R. M. Entwisle, S. K. Fenollosa, H. C. Flood, J. W. Fredette, J. L. Gilmore, Carl Goehring, J. B. Gold, J. P. Griffith, F. H. Harrison, R. T. Hood, James G. Houston, T. D. Jenny, George C. Johnston, H. S. Kenny, F. V. Lichtenfels, M. B. Magoffin, C. H. Marcy, E. W. Meredith, H. T. Price, R. V. Robinson, David Silver, H. W. Stevens, William C. White and E. E. Wible.

GENERAL NEWS ITEMS

The American Antivivisectionist Society will receive $100,000 by the will of the late Grace M. Fogg of New Haven, Conn.

Endowment for Physicians' Wives and Widows.—Dr. Edward J. Ill, Newark, N. J., has endowed a room in St. Michael's Hospital, Newark, "for the use of the wives and widows of doctors when misfortune puts them on the sick bed."

New York Physicians.—As a result of a medical census taken recently by the adjutant-general in New York State, it was determined that there were in the state 13,695 physicians, including 501 women, and that 5,735 of the physicians are available for military duty.

Dr. Kate Brousseau, Los Angeles, left for Europe, under Government orders, where she will undertake the treatment of psychology of persons made insane by the horrors of war. She is the first California woman to be sent abroad in the work of aiding the women and children of France.

The Trained Nurse in war-time ranks merely as an enlisted man. The College Equal Suffrage League of Washington has officially informed the Secretary of War that it thinks the trained war nurse ought to rank as a second lieutenant, which would place her just below the lowest rank of a physician.

Surgeon-General William C. Gorgas spoke at the showing of the motion picture, "Damaged Goods," in the National Theater, Washington, September 16. A nation-wide campaign to reduce immorality in the army and navy of the United States to a minimum has been launched.

High Death Rate from Automobile Accidents.—A study of the deaths among the industrial policy holders of the Metropolitan Life Insurance Company discloses the fact that the death rate from automobile accidents has more than tripled since 1911. In that year the rate was 2.3 per 100,000; in 1916 it had increased to 7.4. Nearly one third of those killed were children under 10 years of age, and over 44 per cent. were under 15 years of age.

Medical Colleges Open to Women.—Announcement has been made that the Harvard University Medical School, the College of Physicians and Surgeons of Columbia University, and the Medical Department of New York University will be open to women. This step has been hastened by conditions arising from the war. Preliminary work in biology, chemistry and physics will be offered at the New York Homeopathic Medical College and Flower Hospital.

Council on Pharmacy and Chemistry.—Since the last report the following articles have been accepted for inclusion with New and Nonofficial Remedies: Betanaphthol benzoate-Calco, Calco Chemical Company; neodiarsenol ampouls, 0.15, 0.3, 0.45, 0.5, 0.75 and 0.9 gm., The Diarsenol Company, Limited; gastron, Fairchild Brothers and Foster; tyramine-Roche,

SENIOR MILITARY MEDICAL ASSOCIATION

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5926 GREENE ST. GERMANTOWN

PHILADELPHIA, PA., September 13 1917

DEAR DOCTOR:

This circular letter is intended to be a descriptive statement of and answer to the usual questions asked about the SENIOR MILITARY MEDICAL ASSOCIATION.

Our government is and will continue to be more in need of physicians than of any other class of men in the prosecution of the present war—a war for the maintaining of our established rights and liberties and our self-respect and the respect and honor due us by other nations.

Surgeon-general Gorgas called a representative committee of the older physicians to Washington for conference, and it was there arranged that an organization of the physicians past the age of fifty-five years (the age limit for admission to the Army and Navy Reserve Medical Corps) should be formed, and that it should also admit physicians under fifty-five years if they are kept at home by reason of teaching in medical schools or being unable to pass the severe medical examination required for admission to said Medical Corps.

The SENIOR MILITARY MEDICAL ASSOCIATION was then formed, and at a largely-attended meeting the officers above named were elected.

The purpose of the Association is to serve the government by performing such medical work as the members are capable of, especially at or near the member's residence. Its members mostly can do only part-time work, but some are able to go from home and do full-time service. The arrangement will probably be a contract with the government to do special service, with a military grading. The pay will be according to the grading and work performed.

It is felt that the members of the Association can act as consultants in general and special physical conditions of recruits and conscripted men; also, in matters of sanitation and hygiene, and in making general physical examinations and mental and special examinations and in working in local hospitals or established places or cantonments where the sick or injured men may be sent; or those where fitness may be brought about in men medically rejected from admission to the service, also in performing any other work they may be capable of by the direction of the government.

No assurance can at present be given as to when service may be requested. Men may apply for admission to the S. M. M. A. by filling out the blank card which will be supplied upon request to Dr. Alexis Dupont Smith, and returning it properly filled out and one dollar, the annual dues made necessary to cover postage and incidental expenses.

For the present, residential limit of eligibility for membership includes Pennsylvania, New Jersey, Delaware, and Maryland. When points remote from Philadelphia have organized units or branches of the S. M. M. A., membership may be transferred.

The membership now numbers several hundred, whose loyalty has impelled them to offer such service as they can perform for their country, now in the time of its need. Surely no slackers are they, when they might have been excused. Their country's honor their honor.

Answers to questions will be gladly made.

WM. DUFFIELD ROBINSON,
Chairman.

Hoffmann-LaRoche Chemical Works; calcreose, calcreose solution and calcreose tablets, 4 grains, Maltbie Chemical Company; chlorinated eucalyptol-Dakin, chlorinated paraffin oil-Dakin, dichloramine-T, Abbott, halazone-Abbott, halazone tablets-Abbott, The Abbott Laboratories; hyclorite, General Laboratories; camiofen ointment, Schering and Glatz.

Rapid Growth of the Birth Registration Area.—Maryland, Virginia and Kentucky are the latest states to be admitted to the Registration Area for Births. The Registration Area for Births was established in 1915 and was then composed of ten states and the District of Columbia. For this area the Bureau of Census has recently issued its first annual report, entitled "Birth Statistics." As the area grows the annual reports, dealing with the births in a constantly increasing portion of the country, will become of constantly increasing interest and value. The need of complete birth registration is recognized as never before. The age of the soldier must be known. Since war was declared tests of the completeness of birth registration have been made by special agents of the Census Bureau in Virginia and Kentucky. Similar tests are now being made in Indiana and New Jersey, and before the year is over will be conducted in North Carolina, Ohio, Utah and Wisconsin. Parents and physicians everywhere are awakening to the importance of this matter and the fashion now is to register baby's birth.

Death of Prof. Theodor Kocher.—On July 27 the medical profession throughout the world suffered a great loss in the death of this famous chief surgeon of the "Inselspital," Berne, Switzerland, and professor in the medical faculty of the Berne University. His specialty was goiter. This formerly most difficult operation was improved and simplified by him and some of the foremost surgeons are not reluctant to acknowledge that they are operating after Kocher's method. Professor Kocher's experience and science enabled him to write on the treatment of fractures even before Roentgen and there was nothing to be altered or added in his treatise of this subject. His technic has led to perfect success in stomach and intestinal surgery, and new methods which he introduced are now employed in cases of epilepsy. He also facilitated the diagnosis of injuries to the brain and spine, and intestinal ruptures are operated on after his directions. To him the world is indebted for discoveries and progress in almost every section of surgery. He was never precipitate in his diagnosis of a case; he knew the value of careful and repeated observation and insisted on absolute certainty in each individual case. In 1904 he was elected chairman of the First International Congress of Surgeons at Brussels. In 1910 he was awarded the Nobel prize for his remarkable achievements in surgery. Numerous brilliant offers reached him from foreign lands, but he refused them all in order to devote his science and activity to the university of his native town. In 1912 he celebrated the fortieth anniversary of his professorship in midst of an assembly of medical celebrities who had come to Berne especially to do him homage on that day. Switzerland mourns him as one of her most brilliant sons and the medical profession in general and many individuals in foreign lands who have received help from this great surgeon will pay a grateful tribute to his memory.

BULLETIN EXCERPTS

BULLETIN, BLAIR

Patriotism and Dollars

With the calling to active duty as medical officers, of large numbers of patriotic practitioners of medicine now in private life, an acute and grave economic question arises which is of the greatest importance, not only to them, but to the profession at large.

These men, whom motives of pure patriotism have induced to volunteer their services to the country in its hour of military need, will be abruptly separated from their practices in civil life, which have been built up by years of labor and by demonstrated professional efficiency and high repute.

Many of them, on entering on the military service, will receive pay and emoluments financially far less than their present income in civil life. In many instances they will have families to support and offices which they will desire to retain.

The war, then, will mean to such a very considerable financial sacrifice and deprivation in many ways to their dependents. It will call on many physicians to make good the difference between the necessary expenses of their dependents and their army pay, from their private resources. This in a way, and within reasonable limits, is one of the sacrifices which, as good citizens, they should make for their country. Other professional men, as lawyers, architects, engineers, etc., will be called on to do the same.

But the professions are under a serious handicap in this respect as compared with the commercial branches of civil life. The doctor, for example, has invested his capital in mental training and mental development which he alone has the power to transmute into financial returns and the comforts of life. If the exercise of this mental development is brought into abeyance, or if it be financially rewarded to a less degree, no part of the capitalized education temporarily directed to military purposes can be employed to the advantage of the income of the individual.

The reverse is true of officers who enter the military service from capitalized commercial pursuits. Here their money has been invested in real property or commodities, and this capital can be turned into money or managed by others so as still to afford an income to supplement the army pay. A business partner, a relative, or a hired agent may conduct the business. A line officer from commercial life may, therefore, with his army pay in addition to his business income, be better off financially after he enters the military service than he was before.

The sacrifices which the professions are called on to make for the privilege of rendering patriotic service are, therefore, greater than those demanded of the commercial classes of similar social status in civil life. This is inevitable, but it may be mitigated.

Also the doctors who enter the service feel that their practices may be absorbed by their competitors who remain behind in civil life, while they themselves risk their lives at the front, and they are naturally apprehensive lest, on returning home after the war, they will find their practices dissipated and lost. This, to many, is a very cogent argument against giving their services to the government and one in which all must recognize the existence of a certain degree of justice. It ought not to be impossible for the profession to remove at least a part of its force by cooperative action, rather than allow it to remain exposed to competitive danger.

The cooperation suggested becomes far more practicable and necessary as a result of the compulsory service law, which renders all doctors—and not volunteers alone—within certain limits of age and physical efficiency, liable to give the nation military service at call. If not enough doctors offer their services to meet the needs of the government, enough others to make up the deficiency will surely be drafted. If the present war in which we are engaged lasts any length of time the probabilities become almost a certainty that such draft will be extensive. No one can foretell where the lot may fall. He who profits now from the practices left by those who have volunteered may soon himself be called to the colors. Cooperative action is necessary by the profession, for neither the patriotic offer of the volunteer nor the obligation of the drafted to perform service should be allowed to be capitalized to the profit of those of the profession who, for one reason or another, may remain at home. Medical men by many thousands will be affected.

The problem is too great and too widely spread to remain without attempt at solution by the profession at large. This attempt should be inaugurated without delay through the various medical societies and the American Medical Association.

The following general action is suggested: (a) The medical societies shall by formal resolution declare that their members absent on military duty are on the same status as if on vacation or other absence. (b) That they shall so declare themselves, in cases where such action is requested by a member about to leave for service, as the custodians and guardians of his practice while so absent. (c) That they shall examine the books of such departing member and shall list as part of his clientele all persons or families to which he has rendered professional treatment within two years. (d) That they shall in such instances, and so far as practicable, direct and designate certain of their members who are to stay at home, to take over all or any part of the professional work which may develop from his clientele. In this way, also, the interests of the prospective patients will be safeguarded by the reputable and qualified. (e) That they shall require from each member so remaining and designated as a locum tenens a written agreement that from any funds received from the listed clientele of the absent medical officer during his absence, 40 per cent. shall be banked to the credit of the latter through a representative of the society, while 60 per cent. may be retained by the physician performing the professional service. (f) That when the medical officer returns from the war to his private practice his clientele will, so far as the society can bring it about, be returned to him by those who have given it professional service during his absence with the colors. (g) That any physician who has thus been designated by the society as a locum tenens and who fails to live up to his agreement therewith, shall be disciplined by the society—not excluding expulsion from membership.

By some arrangement like this, the physician who puts on the uniform, he who remains behind, the profession at large, the welfare of the patient, and the interest of the nation will all be equally safeguarded.

E. L. M.

THE MEDICAL REPORTER, CHESTER

LETTER FROM LIEUTENANT FARRELL

Dear Dr. Sharpless:—As I promised, I feel that I should write you of some of my experiences in the Army. We are still having trouble with our mail, but hope you get this note in time to use if you so desire.

I have been having the grandest time it is imaginable for a man to have. We, I mean the company, is situated on what was the battlefield of Chickamauga, with its many interesting memories and it reminds one of Gettysburg.

Our food is good, sleeping quarters fine, and everything generally of the best. The only really inconvenient thing is the muddy condition of the grounds after a rain, of which we have had plenty in the last two weeks.

The personnel of the camp is made up of the finest and grandest men you could wish to meet, such as Pepper, Dean of the U. P., Abbot, Piersol, Ashton, Babcock, Pfeffer, all of the U. of P., and a host of others, Gaskell, Fox, Newcomb and others of Jefferson. Peple, a noted surgeon of the University of Virginia, with Scott, another prominent surgeon of the same institution. Almost every school is represented by their best men.

It is very evident that the young men of the profession are not doing their duty. It seems strange to me you can fill the base hospital with units of the different schools, but very few are going to the training camps. Most of the men are past middle life, and as I see it I think that the base units should be made up of men of mature years and experience and let the younger ones go to the camps and do the field work where they can find excitement and plenty of work. Their country needs them now and more real good can be accomplished now than later on. I really feel that this matter should be shown to the younger physician. Respectfully,

JOHN A. FARRELL.

THE BULLETIN, CLEARFIELD

"Stick to Your Bush"

There seems to be a tendency in certain parts of the state for a few men, and we are glad to believe they are few, who are located in small towns to take advantage of the absence of men from the larger towns who have gone to the front and move into the larger places in the hope of profiting by their absence in more readily building up a practice.

In view of the fact that the various county medical societies throughout the state are performing a patriotic duty by taking care of the practice of the men who are protecting our boys at the front, and that at great sacrifice, it would seem in mighty bad taste, to say the least, that any man should think for a moment of trying to build up a practice as a parasite when the men in the town to which he purposes going are doing the work for the absentee and turning over from 33⅓ to 50 per cent. of the proceeds to the family of the absentee.

Such a move at a time like this would not redound to the glory of the profession and instead of the vision which such a man has of getting an advantage out of the exigency it is the writer's opinion that he will find after he has moved that the American people have a sense of honor which will not throw any eclat in his direction, and the stigma which he acquires by such a move will remain with him and his progeny the balance of their days.

This is a time to "stick to your bush" and not a time to look for ill-gotten gain and the man who attempts to get advantage out of the present catastrophe will find himself placed in some such light as the food speculators.

This is a time, if there ever was a time, when the medical profession can and will prove to the world that it is deserving of the confidence reposed in it by men of all ages and the man in the profession, if such a man there be, who shall fail to be a patriot when all men who have a heart in the right location are patriots, will go down in history in just such a light as he deserves to be and the light will be mighty strong at that.

Let the man who is in the country, but who has for some time been contemplating a move to a larger field, stay there until the war is over and the men who have been valiant enough to fight our country's battles have returned, if pray God they may return, and again taken up their work where the loyal colleagues at home, who could not go, have preserved it for them; then he may with an honest countenance and with head erect make his contemplated move and enter the field of his choosing, and men will honor him to whom honor is due and he will have his chance for success along with his brethren, and when he will have succeeded, as succeed he will, he will have the consciousness of having done as he would be done by and his progeny may be proud of his achievements and feel it an honor to follow his example. J. M. Q.

BULLETIN, HUNTINGDON

Who Stays May Also Serve

Resolved, That the physicians of Huntingdon County recognize the patriotism of those members of the medical profession resident in the county who volunteer for the service of the U. S. Government, and in appreciation of this, we recommend that should these members of the profession be called into active service the doctors who in their absence attend their patients shall turn over one-third of the fees collected from such patient to the physician in active service—or to his family. Also, it is the intent of the medical profession of the country that when the military surgeon returns from active service, his practice shall be returned to him intact.

Resolved, That any patient consulting a physician, who is not one of that doctor's regular patients, shall be asked to state if a physician at that time in the active service of the government has been his regular physician, making it clear to the patient why the question is asked.

Resolved, That every physician entering the government medical service is expected to procure from his patients signed statements to the effect that he is their regular medical attendant, these signed statements to be filed with the committee on Military Surgeon's Practice.

If signed statements cannot be procured, that the absent physician file a list of his patients with the committee. A duplicate list of absentee's patient shall be given to the remaining physician in each particular locality.

The Resolution above was adopted by the Huntingdon County Medical Society on June 14, 1917.

BOOKS RECEIVED

Books received are acknowledged in this column and such acknowledgement must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

Obstetrics. A Textbook for the Use of Students and Practitioners. By J. Whitridge Williams, M.D., Professor of Obstetrics, Johns Hopkins University; Obstetrician-in-Chief to the Johns Hopkins Hospital, Baltimore, Md. Fourth enlarged and revised edition. With 17 plates and 685 illustrations in the text. New York and London: D. Appleton & Co., 1917.

A Treatise on Regional Surgery. By Various Authors. Edited by John Fairbairn Binnie, A.M., C.M., F.A.C.S., Kansas City, Mo. Volume 1. With 351 illustrations. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street. Price, $7.00 net.

Clinical Cardiology. By Selian Neuhof, B.S., M.D., Visiting Physician, Central and Neurological Hospital; Adjunct Attending Physician, Lebanon Hospital. New York: The Macmillan Company, 1917. Price, $4.00.

The Principles and Practice of Dermatology. Designed for Students and Practitioners. By William Allen Pusey, A.M., M.D., Professor of Dermatology in the University of Illinois, Emeritus; Dermatologist to St. Luke's and Augustana Hospitals, Chicago; Member of the American Dermatological Association. With 54 plates and 466 text illustrations. Third edition. New York and London: D. Appleton & Co., 1917.

Diseases of the Skin. By Richard L. Sutton, M.D., Professor of Diseases of the Skin, University of Kansas School of Medicine; Former Chairman of the Dermatological Section of the American Medical Association; Member of American Dermatological Association; Assistant Surgeon, U. S. Navy, Retired; Dermatologist to the Christian Church Hospital. With 833 illustrations and 8 colored plates. Second edition, revised and enlarged. St. Louis: C. V. Mosby Company, 1917. Price, $6.50.

The Prescription. Therapeutically, Pharmaceutically, Grammatically and Historically Considered. By Otto A. Wall, Ph.G., M.D., Professor of Materia Medica, Pharmacognosy and Botany in the St. Louis College of Pharmacy; Member of the Committee for Revision of the Pharmacopeia of the United States, 1880-1890 and 1890-1900; Second Vice President of the Convention for the Revision of the U. S. Pharmacopeia from 1900-1910; presiding officer for the U. S. Pharmacopeia Convention of 1910; one of the Authors of the "Companion to the United States Pharmacopeia"; Author of "Handbook of Pharmacognosy," "Lessons in Latin," etc. Fourth and revised edition. St. Louis: C. V. Mosby Company, 1917. Price, $2.50.

COUNTY SOCIETY REPORTS

SEVENTEENTH CENSORIAL DISTRICT—SEPTEMBER

The fourteenth annual meeting of the district was held in the Masonic Temple, Sunbury, September 5, with thirty-eight physicians present. This was a fairly good attendance in view of the fact that a goodly number have been accepted for service in the Medical Officers' Reserve Corps. The first session was called to order by the retiring president, Dr. C. H. Swenk. The address of welcome was delivered by

Dr. H. W. Gass of Sunbury, the response to the same by Dr. L. B. Kline of Catawissa. Organization was effected by the election of Dr. J. W. Bruner, president, and Dr. L. B. Kline, secretary.

"Goiter, Present Knowledge of Its Classification, Diagnosis and Treatment," was presented by Dr. H. L. Foss, superintendent of the Geisinger Hospital, who in connection with his talk exhibited several patients to demonstrate the benefits resulting from certain operations. "Constipation" was presented by Dr. J. E. Ratajski of Mt. Carmel.

Session was adjourned for dinner at the City Hotel.

The afternoon session was called to order by President Bruner. "Crippled Children, Special Reference to Putti's Operation," was presented by Dr. G. W. Reese, superintendent of the State Hospital at Shamokin. He exhibited a boy, crippled with drop foot turned to left, eleven years before, by infantile paralysis. He described the technic of the operation in which a portion of bone in ankle was removed. "Physical Defects and Facts of Interest Relative to Examination of Conscripts for the U. S. Army," was given by Dr. C. H. Swenk, member of an exemption board, who clearly explained some of the difficulties in the work and offered valuable suggestions. Spicy and interesting discussion followed the reading of the papers. Dr. Tarumianz, a Russian surgeon, gave a very interesting talk on the war conditions and his experience in the Russian service, including his own case of shock, due to concussion from a shell, followed by unconsciousness and paralysis of lower limbs, which finally resulted in complete restoration to normal condition.

Resolutions of thanks to the speakers, the Northumberland County Society and the Masonic Association for the use of the Temple were unanimously adopted, and meeting adjourned to meet in Bloomsburg in September, 1918.

LUTHER B. KLINE, Reporter.

FRANKLIN—AUGUST

The regular monthly meeting and summer outing of the Franklin County Society was held August 28, at Piney Mountain Inn, on the Lincoln Highway, east of Fayetteville, President Asper presiding. Besides the twelve members, there were present as guests Drs. W. E. Wolf of Adams County and V. M. Reichard of Washington County, Maryland.

Dr. J. Burns Amberson read a paper on "Purpura." He discussed the various recognized forms and divisions, but in his opinion these divisions are but different degrees of the condition. He spoke of the etiology and treatment, mentioning the salicylates and serums, both horse and human. The subject was discussed by Dr. Kempter and others. Dr. Reichard spoke of the difficulty of the county practitioners in taking advantage of the human serum. Only where hospital conveniences could be obtained is this easily possible.

After the meeting was adjourned dinner was served in the dining room to the members and their guests.

JOHN J. COFFMAN, Reporter.

LEBANON—SEPTEMBER

The Lebanon County Society met in the courthouse, September 11, at 2:45 p. m. Dr. Seth Light addressed the members on "Surgical Conditions Common in the Rectum." He mentioned, first, constipation, for he considers this complaint due many times to conditions in the rectum and lower colon. The surgical treatment is gradual dilatation. The second condition is abscess, and it varies largely in respect to depth and location. Good, bold incisions are required at right angles to the sphincter. Naturally following this condition is the third, fistula. This is in a large percentage of cases a sequel to abscess. Dr. Light classified fistulas into internal, external and complete. All of the diverticula must be opened carefully so that no seat of infection will remain. Actual cautery was recommended. For the fourth condition, Dr. Light mentioned hemorrhoids. This is a common condition, but not as common as the patients would have us believe. The injection method of treatment was recommended, though to be shunned in the ulcerated case. The patient is required to use a purge the night before the operation, and just before the operation an enema is taken in order to make the field as clean as possible. With the patient stooping over, a solution of 10 per cent. carbolic acid is slowly injected into the dependent part of the hemorrhoid. The patient must keep quiet for 24 hours. A moderate degree of swelling is noticed; followed by a rupturing and usually a complete recovery in about ten days.

The discussion exhibited the fact that many physicians are too lax in making rectal examinations, and serious conditions are needlessly overlooked.

GEORGE R. PRETZ, Reporter.

PHILADELPHIA—JULY

Meeting of Wednesday, July 25

PRESIDENT JUMP in the Chair.

THE PRESIDENT: The Philadelphia County Medical Society has met in special session to hear Colonel Goodwin of the British Army, who has been appointed to sit with Surgeon-General Gorgas of our Army to advise on the conduct of the medical department of the war. The medical reserve officers in the Society have been asked to appear tonight in uniform, for the time has arrived when the men who have offered their services to the government should be known. There are many men in Philadelphia County who are in the Medical Reserve Corps; and there are many of proper age and few responsibilities and obligations who have not yet seen their privilege of fighting for the honor of their country and for the democracy and the peace of the world. About this matter we are much concerned. We have invited Colonel Goodwin to tell us the story of the fighting of the English troops in France and Belgium. Colonel Goodwin went to France with the first expeditionary force of the English and has been at the battle front for three years. His service has been filled with thrilling episodes and he has seen all of the horrors of war. It gives me a great deal of pleasure to introduce Colonel Goodwin. and I know that we shall appreciate the privilege of hearing him.

COL. T. H. GOODWIN: It has been suggested that in speaking to you this evening I relate a few incidents of the medical aspects of the war at the front. I can tell you only of the medical aspects and nothing at all of the military side. I shall tell you also only that which I know to be absolutely true; therefore, what I say may be somewhat personal and, I fear, a bit narrow; for, when at the front, it is astonishing how little one knows of what is transpiring. It is probably less than the man in London knows who sees the newspapers and the telegrams.

In the beginning of August, 1914, I was in Devonshire, when we received orders to mobilize the field ambulance. We arrived at Battini at 10 o'clock, August 21, and turned in at about 1 o'clock the next morning. There were no signs of the troops at daybreak and we sent off three officers on bicycles to get into touch with the cavalry division. In the afternoon the officers returned bringing orders to join the division at once. The people all along the road were most hospitable. We found heavy fighting in front of us, and were told to wait for orders. These came for 5 o'clock the next morning, and as we went we encountered the pitiable sight of women and children weeping and leaving their homes. We kept in touch with the troops and by evening we had a large number of wounded under our care, establishing a dressing station at a house in the village. The whole country seemed to be one moving mass of troops. We had an average of four hours' rest a day. In the field medical unit one invariable rule is that attention must be given first to patients, second to horses, third to men and fourth to officers. Always we must know exactly where the men are; they will lie down in any hole or corner and go to sleep, and unless their location is known the troops will go off with some missing.

At one time we failed to get our supplies and our reserve had been used. We managed to feed the horses by taking oats along the way. We had, however, nothing for the men; we were also without prospect of getting our patients to the rear. Just at this time we observed a bit of smoke and saw a train approaching which proved to be a train of refugees going to Paris and the last one going South. It was a matter of minutes to pack in our wounded, all of whom by some means got to England within thirty-six hours. The young officer in charge was quite a youngster, not more than 23 or 24, and had never seen service before. He certainly did remarkably well. This shows what a young doctor with common sense, judgment and decision can do when the occasion arises. We moved on, trying to obtain supplies. Coming to a station, we found some trucks. These we broke into and found meat and cheese and hay and oats. Of course, any moral sense of the right of taking these was absolutely gone. The town, however, was captured the next day and we at least prevented these from falling into the hands of the enemy. Sept. 1, 1914, was a very hard day, and at night we were obliged to have the men sleep. When the troops sleep the doctors must be at work all night, attending to the wounded. When the fighting commenced it did one's heart good to see the men; they were in such splendid heart, cheery, longing to be fighting and never wanting to stop and rest. One felt prouder than ever in being with such men and to be able to do anything for them.

I have been for twenty-five years in the army, and can say that there is no man in the whole world like the British soldier. He has indomitable courage, is cheerful, patient; has an extraordinarily high sense of honor, and is loyal and absolutely unswerving in his devotion to his officers. I say, the "British" soldier, but you and I and the soldier all come from the same stock; we have the same ancestors, the same ideals, the same traditions. The time is coming when the whole English-speaking race will be proud of its kinship with the English-speaking soldier.

The first gas attack was made in April, 1915. We were utterly unprepared for such an onslaught, when one moonlight night a change in the wind enabled the enemy to send over clouds of chlorine gas. Within ten minutes the dead were all about us. At dawn it was seen that the trees for miles were leafless. Looking back to that time it seems impossible that our men could hold out against the enemy; yet they did magnificent work.

Of the use of the war we may well inquire and the question is answered in part by the fact that things such as love and strength and the soul of man cannot be bought with a common price. The love which has grown up between France and England in this war will not die with the end of the struggle, but will last while the memory of it lives. I also believe that the two great English-speaking nations can never, while the English language is spoken, again become separated.

I have been sent over with Mr. Balfour to ask if the United States of America will send physicians and nurses to England. The answer to my appeal has been generous and prompt to a degree which I personally never thought possible. I understand that this city has occupied a very prominent position in offering its medical men. I would thank you very much indeed, and ask you to believe that every man going into the Medical Reserve Corps is doing his country the greatest service in his power. May I ask that the work begun so very, very well may be continued without any relaxation of effort. Thousands of medical men will be required to meet the needs of the American Army before and after it leaves this country. It is absolutely essential that every doctor bear his share of his country's burden. For the sake of your country, your sons and brothers going to France, see that your army has an ample supply of medical men. If there is any shortage of medical men the amount of suffering and loss of life will be appalling. Do not underestimate the enemy. The German is a brave fighting man, patriotic and loyal to the highest intensity, and I do not believe that he will give in until he is absolutely defeated. Do not, therefore, hold any false conception regarding the length or severity of this war.

Much as our women have always merited the highest respect and admiration, never have they been shown to greater advantage than in the last three years. The women of France and England have been simply magnificent. I believe every woman in England has borne sacrifice. I cannot tell you how much the French nation owes to its women. They have lost everything, yet they have borne the loss uncomplainingly. I am afraid many American women will have to endure loss, perhaps not to the extent of the French and English, but the women of America will bear loss as have their French and English sisters and as women have borne loss in all the years. The sending of the medical men into the war will be the largest factor in lessening this loss.

WESTMORELAND—SEPTEMBER

The meeting of the Westmoreland County Medical Society was held in the City Hall, Greensburg, September 4, with President Prothero in the chair and twenty-four members present. The committee on the care of practices for members of the society who are on duty in the Medical Officers' Reserve Corps reported that postal cards should be sent out asking for suggestions and the question settled at the October meeting. The honor roll to date includes fifty-one physicians of our county.

Dr. O. B. Snyder read a paper on "Fracture of the Long Bones," bringing out the following points: Be guarded in prognosis and warn patient early of probable deformity or loss of function. Do not promise too much when the fracture involves a joint. Give more attention to injuries in which a fracture may exist. Insist on having a radiograph in a large percentage of cases, and in all doubtful ones. Fit a splint to the part rather than make the part conform to some particular splint. Make frequent early removal and reapplication of dressings for inspection. The paper was freely discussed. The plastic splint as devised by Dr. Buchanan of Pittsburgh received favorable comment and has been adopted by many of our members. ELLSMER L. PIPER, Reporter.

NECROLOGY

IN MEMORIAM—GREENE R. HULSIZER, M.D.

Dr. Greene R. Hulsizer, physician, born in Easton, July 28, 1862, was graduated from the Easton high school in 1880; afterward entered Lafayette College, but left there to study medicine at home while engaged for two years in teaching. He then entered Jefferson Medical College, where he was graduated in 1887. His interest was especially given to surgery, and after graduating he was, by competitive examination, appointed resident physician of the Jefferson Medical College Hospital. He subsequently entered on general practice, specializing in obstetrics, and in thirty years of practice attended 1,953 cases, leaving a clean record, never having lost a patient. In 1888 he was appointed police surgeon of the Philadelphia police and fire departments. In 1895 he, with Dr. T. H. Andrews, organized the Medical Emergency Corps, composed of district police surgeons, its purpose being to render all possible assistance in case of injury at fires or elsewhere. This corps, which was under Dr. Hulsizer's command and was the first of its kind in this country, proved highly efficient and useful in its operation. In addition to his labors in these fields, he was appointed assistant medical inspector of the board of health, which position he occupied for sixteen years.

THE TRUTH ABOUT MEDICINES

NEW AND NONOFFICIAL REMEDIES

Since publication of New and Nonofficial Remedies, 1917, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

CONCENTRATED SOLUTION SODIUM HYPOCHLORITE-MULFORD.—A 5 per cent. aqueous solution of sodium hypochlorite containing free chlorin equivalent to 0.2 to 1.0 per cent. of sodium hypochlorite. One volume is diluted with nine volumes of water and the amount of boric acid required (stated on the label) to render the solution neutral is added. This dilution is used in the irrigation method of treating infected wounds. The H. K. Mulford Company, Philadelphia (*Jour. A. M. A.*, Sept. 1, 1917, p. 727).

CALCREOSE.—A mixture containing approximately equal weights of creosote and lime in chemical combination. It is stated that, when administered internally, calcreose has the same actions as creosote. It is claimed that it is not likely to produce gastric distress, nausea or vomiting. Calcreose is sold in the form of powder, as Solution Calcreose and as Calcreose Tablets, 4 grains. The Maltbie Chemical Co., Newark, N. J.

BETANAPHTHOL BENZOATE-CALCO.—A brand of betanaphthol benzoate, complying with the New and Nonofficial Remedies standards. The Calco Chemical Co., Bound Brook, N. J. (*Jour. A. M. A.*, Sept. 8, 1917, p. 821).

THIOCOL-ROCHE.—Thiocol is the potassium salt of orthoguaiacol sulphonic acid, obtained by sulphonating guaiacol. Thiocol-Roche acts as a sedative expectorant. It has the advantage over guaiacol in that it is comparatively tasteless, does not disturb digestion and is nontoxic. It is claimed to be useful in the treatment of diseases of the respiratory tract, incipient tuberculosis and certain diarrheas. Thiocol-Roche is supplied in the form of a powder, as Syrup-Thiocol and as Thiocol-Roche Tablets, 5 grains. The Hoffmann-LaRoche Chemical Works, New York (*Jour. A. M. A.*, Sept. 15, 1917, p. 911).

DICHLORAMINE-T. ABBOTT. — Paratoluenesulphonedichloramide. This is said to act much like chlorazene, but capable of being used in solution of eucalyptol and liquid petrolatum, thus securing the gradual and sustained antiseptic action. Like chlorazene, dichloramine-T, Abbott is said to act essentially like the hypochlorites, but to be less irritating to the tissues. Dichloramine-T, Abbott is said to be useful in the prevention and treatment of diseases of the nose and throat. It has been used with success as an application to wounds, dissolved in chlorinated eucalyptol and chlorinated paraffin oil. The Abbott Laboratories, Chicago.

CHLORINATED EUCALYPTOL-DAKIN.—Eucalyptol chlorinated at ordinary temperature. It is used as a solvent for dichloramine-T. The Abbott Laboratories, Chicago.

CHLORINATED PARAFFIN OIL-DAKIN.—Liquid petrolatum, chlorinated at ordinary temperature. It is used as a diluent for solutions of dichloramine-T in chlorinated eucalyptol-Dakin. The Abbott Laboratories, Chicago.

HYCLORITE.—A solution of chlorinated soda, each 100 Gm. being stated to contain sodium hypochlorite 4.05 Gm., sodium chloride 3.20 Gm., calcium hydroxide 0.25 Gm., inert salts 0.92 Gm. It contains not less than 3.85 per cent. available chlorine. Hyclorite has the action and uses of solution of chlorinated soda, U. S. P., but its available chlorine content is greater. One volume of hychlorite diluted with seven volumes of water has the same available chlorine content as neutral solution of chlorinated soda-N. N. R., and is said to be isotonic. The available chlorine content of hyclorite decreases at the rate of about 12 per cent. per year. In order that allowance for this deterioration may be made in the preparation of dilutions to be used in the irrigation treatment of wounds, each bottle of hyclorite bears the date of bottling. The General Laboratories, Madison, Wis. (*Jour. A. M. A.*, Sept. 29, p. 1081).

PROPAGANDA FOR REFORM

Chamley, Cancer Quack.—S. R. Chamley, sometimes spelling his name Chamlee, is the "cancer cure" quack who frightens impressionable women into the belief that "any lump in woman's breast is cancer." In spite of repeated prosecutions by the postal authorities, he is still active. Now he offers to instruct homeopaths and eclectics in the "cancer cure" business. Chamley asks that mail be sent to "Homeopathic Cancer College," Los Angeles, Calif. (*Journal A. M. A.*, Sept. 1, 1917, p. 749).

Bon-Opto.—Bon-Opto is advertised to make weak eyes strong. The following nonquantitative and meaningless formula is furnished: "Chloretone, Zinc Sulphate, Sodium Chloride, Boric Acid, Menthe Poivree, Camphre de Menthe." The state chemists of New Hampshire report that Bon-Opto contains: sodium chlorid (common salt), 39.52; zinc sulphate (white vitriol), 6.83; boric acid, 39.69; menthol, a small amount (*Jour. A. M. A.*, Sept. 1, 1917, p. 750).

Wilson's Wa-Hoo Bitters.—"C. K. Wilson's Original Wa-Hoo Bitters" was sold as a "Great Blood and Nerve Tonic" and as an unfailing specific for partial paralysis, St. Vitus Dance and all forms of weakness. Federal chemists reported the product to be a watery solution (slightly sweetened) of Epsom salt, salicylic acid and a laxative plant drug with indications of sassafras, gentian and prickly ash. The therapeutic claims were declared false and fraudulent by the government authorities (*Jour. A. M. A.*, Sept. 1, 1917, p. 750).

Ferrivine, Intramine and Collosol Iodine.—The Council on Pharmacy and Chemistry reports that Ferrivine, Intramine and Collosol Iodine, sold in the United States by E. Fougera & Co., Inc., were found inadmissible to New and Nonofficial Remedies. Ferrivine and Intramine are advertised for the treatment of syphilis, while Collosol Iodine, mercury and iodides are recommended as adjuvants. A carefully controlled clinical trial made by L. W. Harrison and C. H. Mills and reported in the *Lancet* indicated that Ferrivine and Intramine are inefficient as spirocheticides and that the local and general reactions that follow the injection are severe. They say that in the case of Intramine "the pain is undiluted torture" (*Jour. A. M. A.*, Sept. 8, 1917, p. 841).

Tyramin as an Adjunct to Morphin in Labor.—Henry G. Barbour, Yale University Medical School, aided by a grant from the Therapeutic Research Committee of the Council on Pharmacy and Chemistry, has studied the effects of tyramin on the action of morphin in labor. In labor morphin exhibits one desirable effect, analgesia, and two untoward results, namely, respiratory depression in the child and delay of labor. Experimental work at Yale having given no support to the use of scopolamin as an adjunct to morphin in labor, tyramin and similar bodies were studied. Animal experiments demonstrated that tyramin (para-hydroxy-phenyl-ethyl-amin-hydrochlorid) counteracted the respiratory depression of morphin. In man, from 40 to 50 mg. of tyramin, administered simultaneously with a therapeutic dose of morphin of 16 mg., completely antagonized the depressant action of morphin on the respiration. The effects of morphin-tyramin on normal labor is being studied at Yale. So far it appears that analgesia is as complete as if morphin were given alone. The respiration of the mother is increased rather than depressed and the condition of the children is quite satisfactory. Further, the uterine contractions have always been increased in frequency and in degree (*Jour. A. M. A.*, Sept. 15, 1917, p. 882).

Musterole Poisoning.—D. I. Macht reports the case of a scarlatiniform eruption, evidently caused by an application of Musterole, a proprietary composed essentially of lard or some similar material, oil of mustard, menthol and camphor. Macht reports on the effects of mustard oil and warns against its careless use (*Jour. A. M. A.*, Sept. 15, 1917, p. 901).

Emetin Diarrhea.—Emetin not rarely produces a bloody diarrhea in the course of its clinical use in the treatment of amebic dysentery. The symptoms and the gross appearance of the stools in emetin diarrhea are almost indistinguishable from those of amebic dysentery. Contrary to a prevalent opinion, children are not especially resistant to the effects of emetin, and the dosage for them must be graduated with great care (*Jour. A. M. A.*, Sept. 15, 1917, p. 916).

Spurious Neosalvarsan.—"Dr." Nicholas Clements is under indictment in New York City for manufacturing and selling imitation neosalvarsan. The material was put up in packages made to resemble in outward appearance the genuine article. It proved to be common salt colored yellow (*Jour. A. M. A.*, Sept. 15, 1917, p. 930).

Pierce's Anuric Tablets.—According to the World's Dispensary Medical Association, Anuric is the newest discovery in chemistry, whereas, in fact, it is a worthless and dangerous nostrum sold as a cure for kidney disease. The A. M. A. Chemical Laboratory reports that from a qualitative analysis, Anuric Tablets contained sugar, acetate, iodid and salicylate of either sodium or potassium, quinine, aloin, hexamethylenamin and plant drugs. The composition of the tablets was so evidently irrational and absurd that an exhaustive analysis was not deemed worth while (*Jour. A. M. A.*, Sept. 15, 1917, p. 930).

Venarsen.—F. A. Brayton used Venarsen in a series of active syphilitics to determine its therapeutic value. The clinical study was made because many physicians consider this sodium cacodylate preparation as an efficient substitute for salvarsan, even referring to it as "Denver salvarsan." His study confirms the experience of others, namely, that Venarsen is worthless in the therapy of syphilis. He also reports that a venous sclerosis was produced in each case in which the drug was administered and that it is capable of producing a severe nephritis (*Jour. Ind. State Med. Assn.*, Sept. 15, 1917, p. 339).

Volatile Irritants in Collapse.—To determine the action of so-called circulatory stimulants that are commonly administered by subcutaneous injection in shock or allied conditions, Lieb and Herrick have studied the effects of injections of alcohol, ether, camphor and ether, camphor and oil, and turpentine in animals decerebrated so that the pain factor would be entirely excluded. They conclude that the transitory rise in blood pressure that these medicaments produce is entirely reflex in character. The heart plays little or no part in the process, the response being effected through the vasomotor apparatus. The use of injections of camphor in oil, or camphor in alcohol, to stimulate an anesthetized or profoundly prostrated or unconscious patient, therefore, has no experimental justification and its employment is seriously to be questioned (*Jour. A. M. A.*, Sept. 22, 1917, p. 1008).

THE PENNSYLVANIA MEDICAL JOURNAL

Official Organ of the Medical Society of the State of Pennsylvania

VOLUME XXI
NUMBER 2

ATHENS, PA., NOVEMBER, 1917

SUBSCRIPTION:
$2.00 PER YEAR

ORIGINAL ARTICLES

FACTORS OF SAFETY IN ABDOMINAL HYSTERECTOMY *

DONALD GUTHRIE, M.D.
Surgeon to Robert Packer Hospital
SAYRE

With the modern methods of preparation of patients for operation, the improvement in the operative technic and anesthesia, and with intelligent postoperative care, the operation of abdominal hysterectomy is no longer considered one of the grave surgical procedures. In review of our 373 hysterectomies of all types performed in the last six years, we are impressed with the following factors of safety:

First: The preparation of the patient. It is important for the surgeon to know the exact physical condition of every patient presenting herself for operation. This necessitates careful history taking, careful examination of the chest, the circulation, the condition of the blood stream, the nervous system, and her kidney efficiency. Patients who have suffered severe loss of blood at the menstrual time we believe should be operated upon just before the onset of the next period, giving the body a chance to recover from the last severe hemorrhage. Patients with

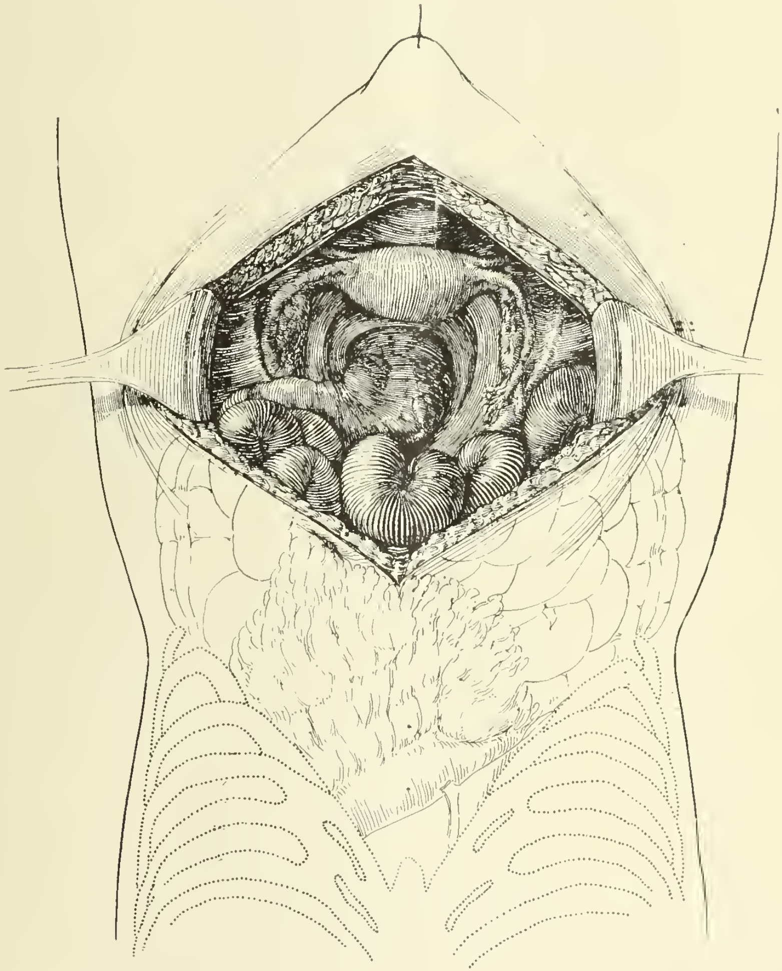

Fig. 1.—Trendelenburg anesthesia. Showing the coils of small intestine gravitated out of the pelvis when the patient is anesthetized in the Trendelenburg position.

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* Read before the Luzerne County Medical Society at Wilkes-Barre, Oct. 18, 1916.

severe metrorrhagia, flowing at the time of examination, should be given salines, and tonics, and such measures carried out that will tend to stop the hemorrhage and give the body a chance to recuperate from it. If the hemoglobin is reduced below 40 per cent., and the bleeding cannot be controlled, direct transfusion of blood from some blood relation is a valuable aid in the preparation as was borne out in five of our cases. I am satisfied these patients could not have stood operation had not transfusion been performed.

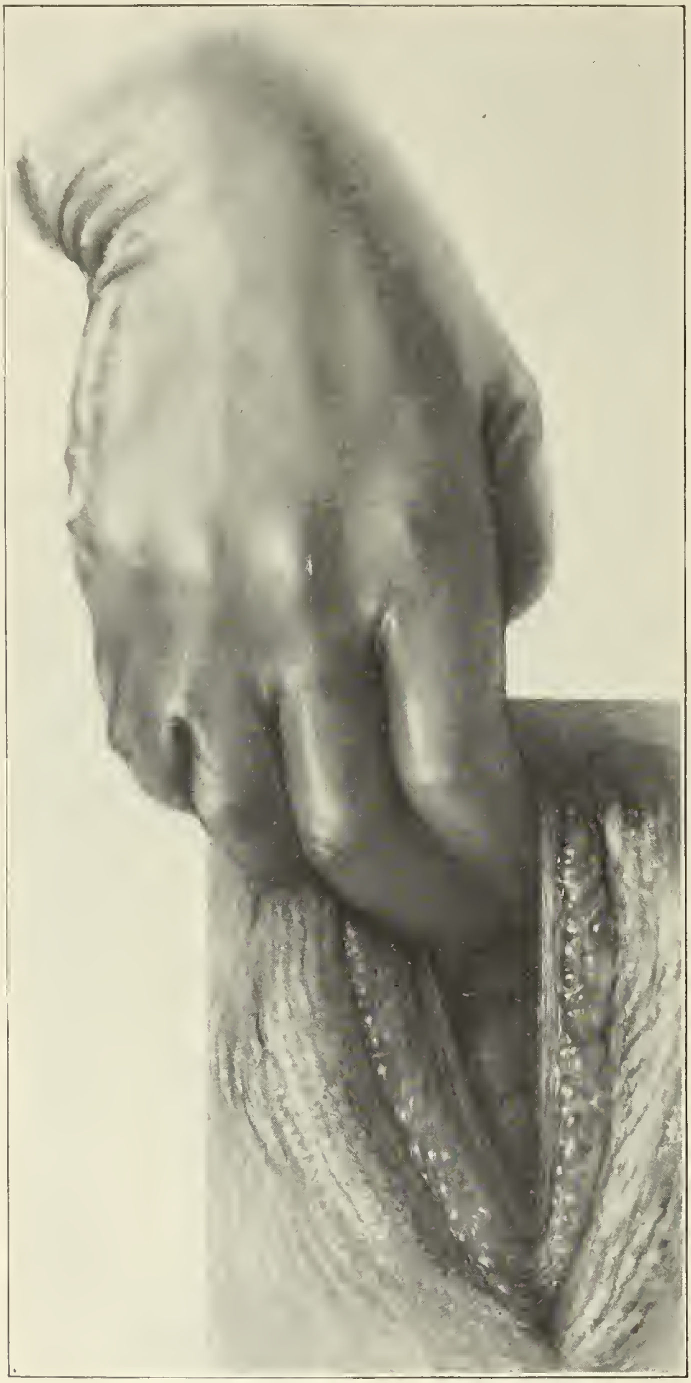

Fig. 2.—Lifting up abdominal wall to free pelvis of any coil of small intestine.

Two factors which promote postoperative shock are loss of sleep and dehydration. In our preparation of patients for any abdominal operation we consider these two factors carefully. In nervous excitable cases with insomnia we advise a few days' rest in the hospital, and are careful to see that these patients sleep well at night.

We give our laxatives early in the afternoon of the day before the operation, our aim being to have the patient disturbed as little as possible by the action of the laxative. Our choice of laxative is castor oil, which acts mechanically rather than drawing fluids from the body. We do not use calomel in any form, followed by salines, believing that large quantities of fluids are lost in this way. We plan to have the patients lose as little fluids as possible on the operating table; therefore, our operating rooms are at normal room temperature instead of excessively hot. The patients are not wrapped in blankets, and no measures are taken to keep the operating table warm. It is seldom ever necessary to change the patient's night garment on the table after the operation is over because of perspiration.

In all cases of hysterectomy the patients are shaved in the afternoon and the abdomen treated with tincture of iodin. This is repeated just before operation. In addition the vagina is washed out well with soap and water, and a 1 to 5,000 bichlorid douche given. This is repeated on the table should the case be one for complete hysterectomy.

The value of good anesthesia by a trained anesthetist cannot be too strongly advised. The responsibility of the anesthetist in major operations is next to that of the surgeon. Most hospitals today have the services of a skilled anesthetist. The personality of the anesthetist is most important, for he or she can by skilled suggestion calm the most nervous sort of patients. In all of our cases of pelvic surgery we employ the Trendelenburg anesthesia. The anesthetic is started with the patient in the Trendelenburg position on the operating table. It is not necessary to have all patients come to the operating room, but if the anes-

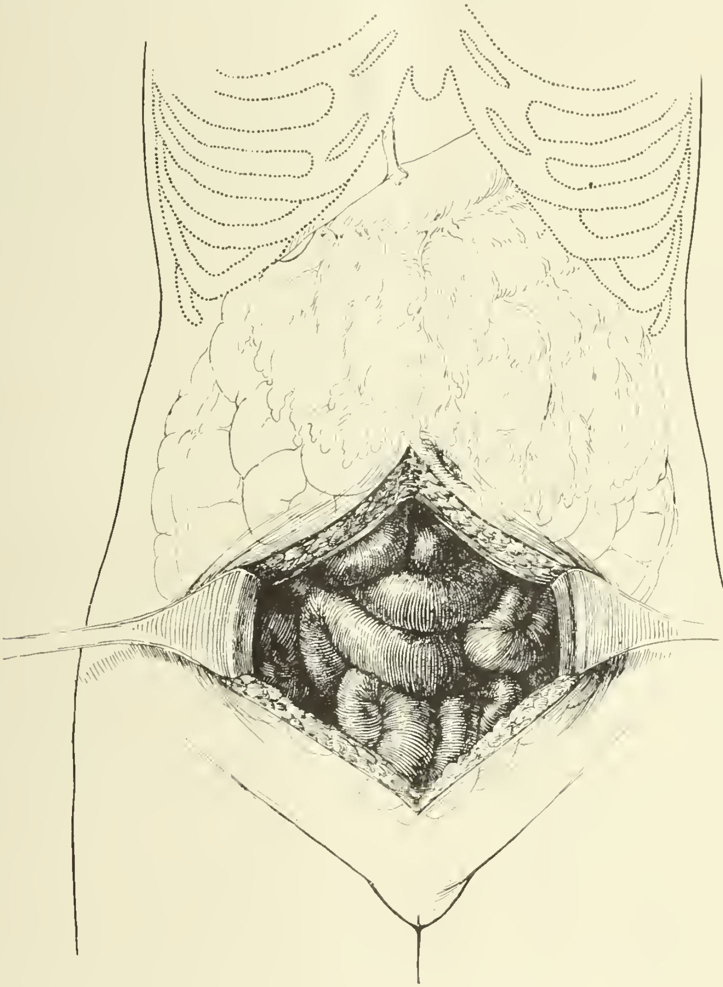

Fig. 3.—Compare the difference in the amount of small intestine in the pelvis when the patient is anesthetized in the dorsal position.

thetic is given in an anesthetizing room the patient is put to sleep in the Trendelenburg position on the table which is to be used during the operation. Here, the personality of the anesthetist is most important, for by suggestion the fears of the patient, the slight discomfort in beginning the anesthetic in this position can be allayed.

We all know that trauma to the small intestine is a great factor in the production of shock.

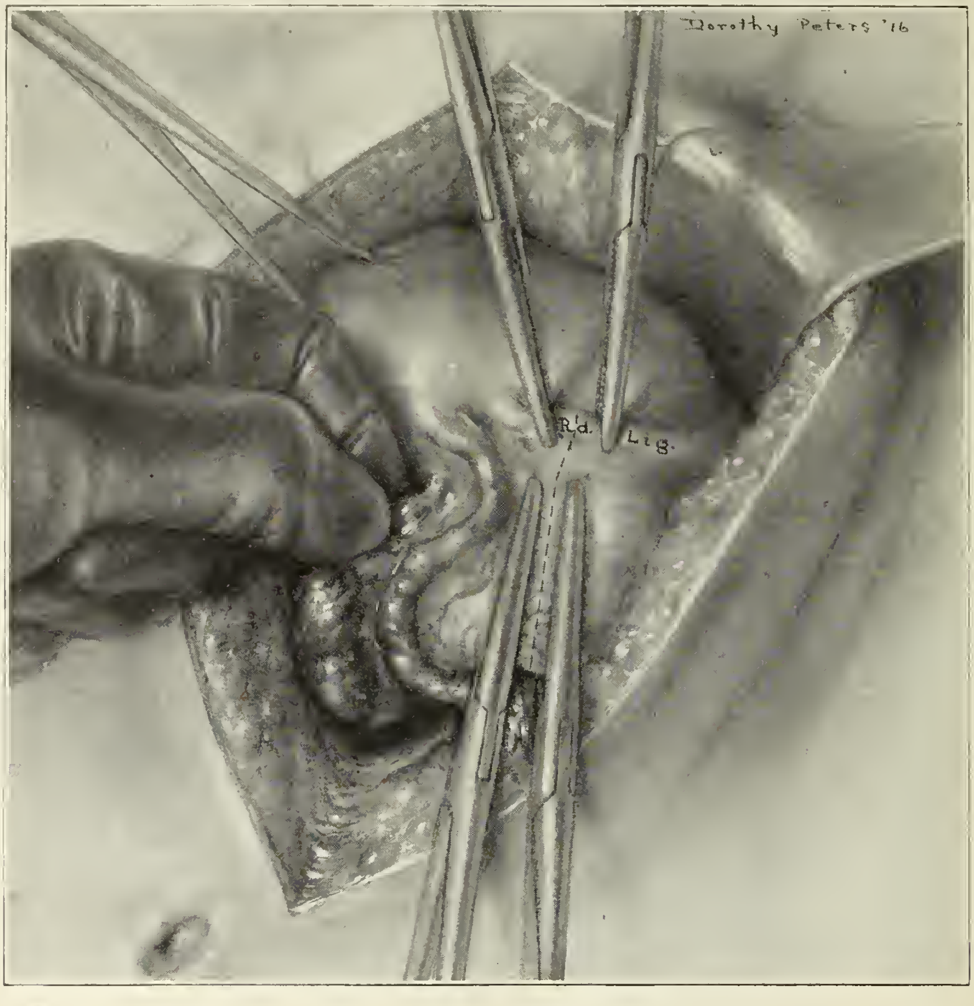

Fig. 4. Forceps applied to broad ligaments, including ovarian arteries, and forceps placed on round ligaments.

In this type of anesthesia it is planned to have the small intestine out of the pelvis when the abdomen is opened. If Trendelenburg anesthesia is used it is unusual to find but a coil or two of small intestine in the pelvis, and it is seldom ever necessary to use more than one small square of gauze to get excellent exposure (Fig. 1). When we open the peritoneum we insert two fingers into the abdomen and lift the abdominal walls well up (Fig. 2) the inrushing air will cause any coil of intestine that has not gravitated out of the pelvis to slide upward. When this method is compared with the one usually employed, of putting the patient to sleep in the dorsal position, making the incision, then calling for the Trendelenburg position, it is amazing to see the difference in the amount of gauze used to obtain exposure (Fig. 3). Trauma to the small intestine varies with the amount of packing necessary, and we consider this one of the safe factors in preventing shock in pelvic operations. Should the pelvis not be infected the gallbladder is explored by touch before packing is inserted. If gallstones are found the question as to whether or not they should be attended to depends upon the condition of the patient at the end of the pelvic operation. The appendix is always removed after hysterectomy unless some critical state of the patient contraindicates its removal.

In our operation for abdominal hysterectomy we use the clamp method, clamping and cutting first the broad ligaments containing the ovarian arteries on both sides, next the round ligament separately (Fig. 4). Freeing up the uterus on both sides in this manner we dissect the fold of the peritoneum on the anterior surface of the uterus, push the bladder forward, then isolate the uterine vessels on both sides and cut between the clamps (Fig. 5). The cervical canal is wiped off with gauze wet in bichlorid. We do not use any strong antiseptic here, fearing that if a slough is produced it may favor intestinal adhesions. In two of our earlier cases the patients had to be operated on for this condition. The objection some few men have to the clamp operation is the fear that it produces thrombosis in the veins. This I do not believe because the results in vaginal hysterectomies where clamps are used are good, and pulmonary embolism is not any more common in this class of work than in any other. Our sutures are placed well behind the clamps and are placed in immediately so if thrombosis has occurred it would be in the vessel at the distal side of the ligature. We do not use mass ligatures of any kind nor do we use the old pedicle needle. The vessels in the broad ligaments are secured by using a safety tie, then a lock suture throughout. The uterine vessels are ligated after fixing the ligature along the side of the cervix by a safety tie and then securing the vessels firmly by another tie of the same ligature (Fig. 6).

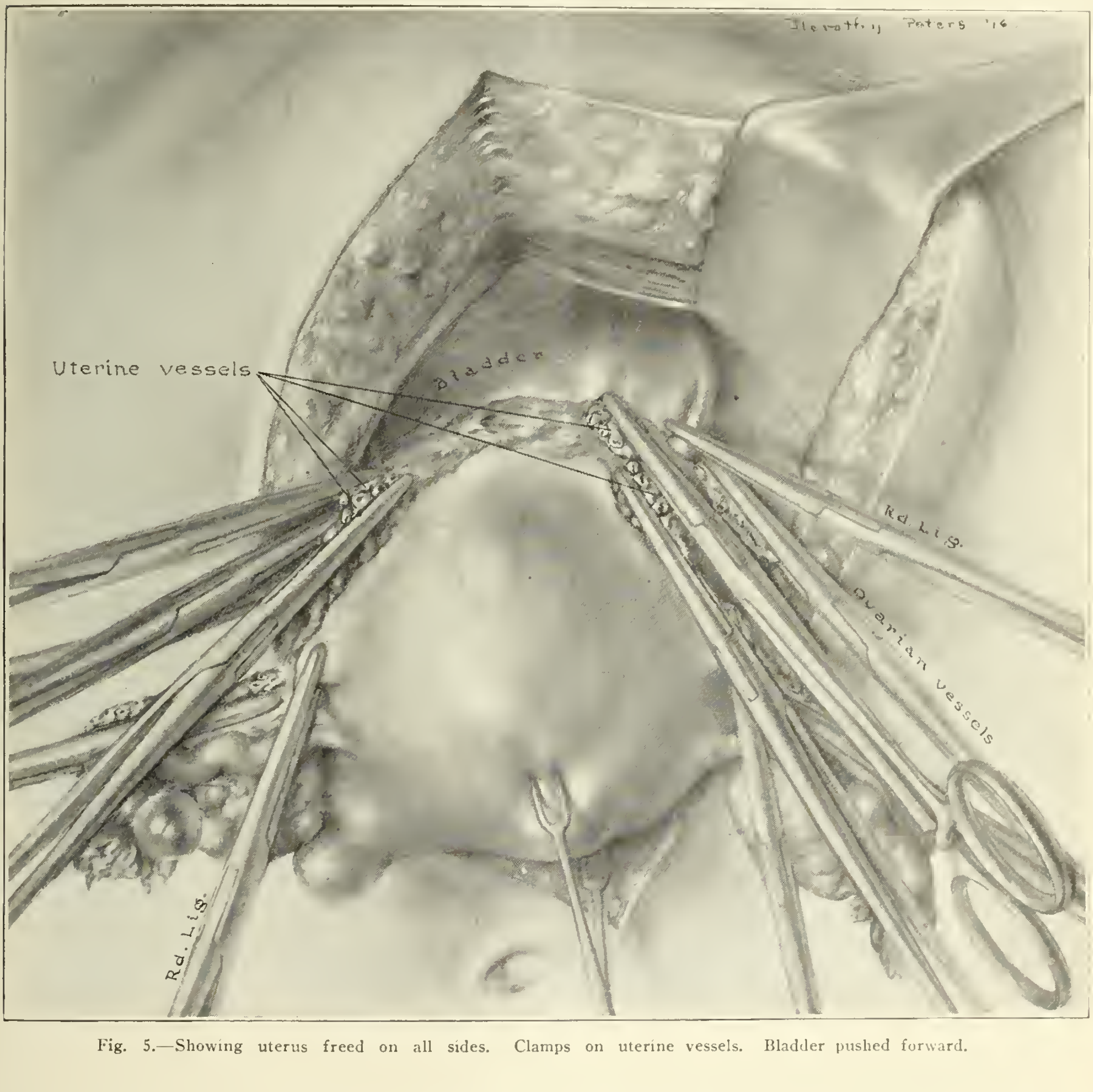

Fig. 5.—Showing uterus freed on all sides. Clamps on uterine vessels. Bladder pushed forward.

If a panhysterectomy is to be performed we isolate the ureters by splitting the posterior peritoneum, following them throughout their course. In a few cases we have used the ureteral catheter passed in the ureter and left in place. This makes it easy to recognize these structures, as they pass close to the cervix. To my knowledge we have never cut or ligated a ureter in a panhysterectomy. In cutting across the body of the cervix we use a conical incision which favors coaptation of the cervical margins. It is most important, I believe, to close up the cervix carefully, and to bring back the anterior peritoneal fold sutured to the posterior peritoneum (Fig. 6). In multiparous women with relaxed vaginal outlets we suture the round ligaments across the cervical body to prevent prolapse of the cervix into the vagina. An equal pull from each side tends to hold the cervix well up in the vagina (Fig. 7). Before closing the abdomen we bring the omentum down into the pelvis, completely covering the operative field, and all coils of small intestine, which have gravitated back in the pelvis. By so doing the liability for adhesions is lessened. In the closure of our wounds we use a continuous stitch in the peritoneum and interrupted sutures of chromic catgut in the muscle and fascia. This is a safer method than a continuous stitch. These sutures are not tied tightly.

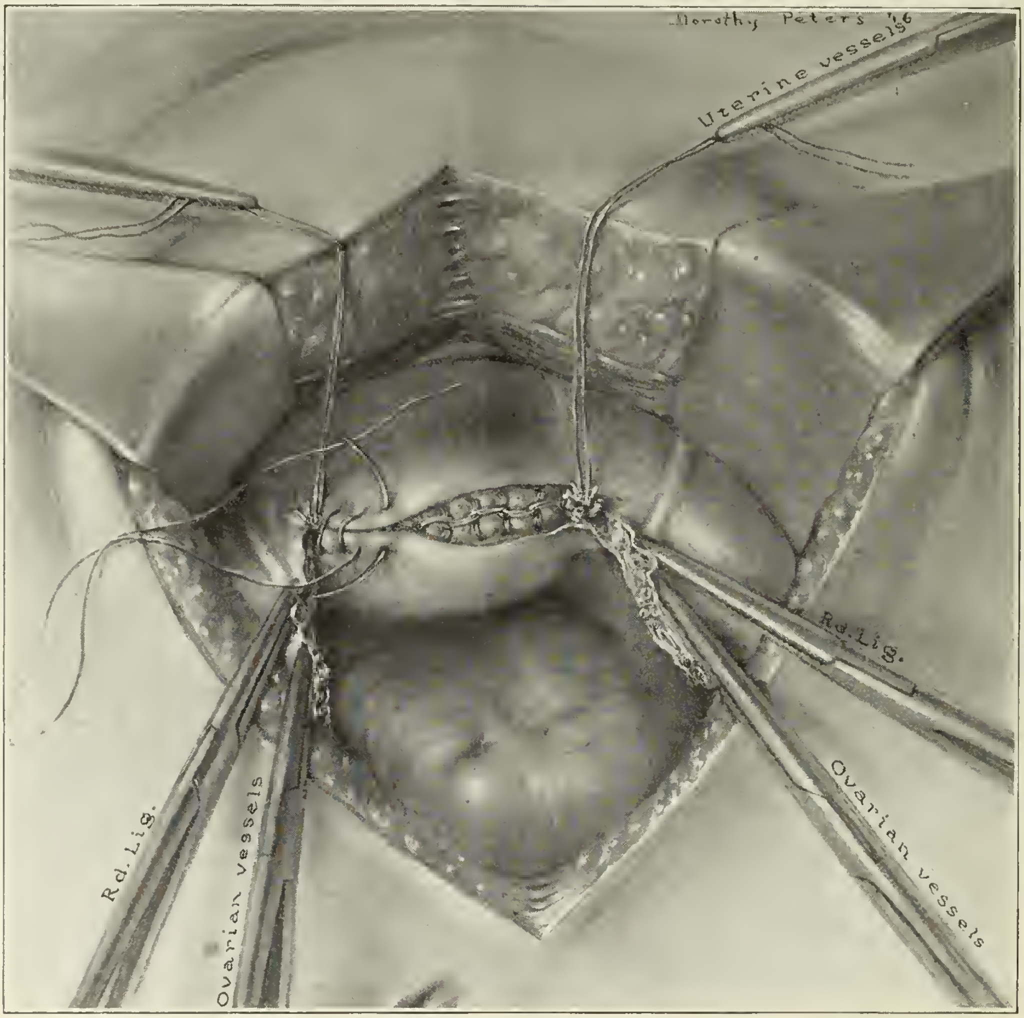

Fig. 6.—Method of securing vessels in broad ligament. Stump of cervix closed and peritoneal folds carefully coaptated.

I cannot advise too strongly that the operating surgeon see his patients daily, and at frequent intervals after operation. The responsibility of the postoperative care of patients should not be entrusted entirely to the house doctors and nurses. Oftentimes complications may be recognized by the surgeon early and combated, which would be overlooked by subordinates if they had complete care of the patient.

Our patients are kept in quiet recovery rooms for the first three days after operation. A nurse is placed in constant charge of four or five patients. We give tap water freely by bowel, fluids freely by mouth, soon after the operation. We use but very little morphin, usually one-sixth grain the night of the operation. One condition that we watch closely is the postoperative atony of the stomach, which in some cases if not recognized is a precursor of acute dilatation of the stomach, or acute gastromesenteric ileus. Any patient who has regurgitation or vomiting on the second day, or one who is restless, worried, or somewhat distended, has a lavage performed. If there is any tendency at all to acute dilatation, the stomach is washed out every three hours with good hot tap water. For the ileus and retention of urine we have had good success by the use of pituitrin. We employ all other means possible for retention of the urine other than the catheter. We fear its use and only resort to it when all other methods fail. We have had no postoperative hemorrhages in any of our cases, and I did not see a postoperative hemorrhage in the many hundred cases of hysterectomy that I took care of at Rochester. The lock suture in the broad ligament and the way of securing the uterine arteries are certainly safer than a mass of ligatures employed by the old pedicle needle.

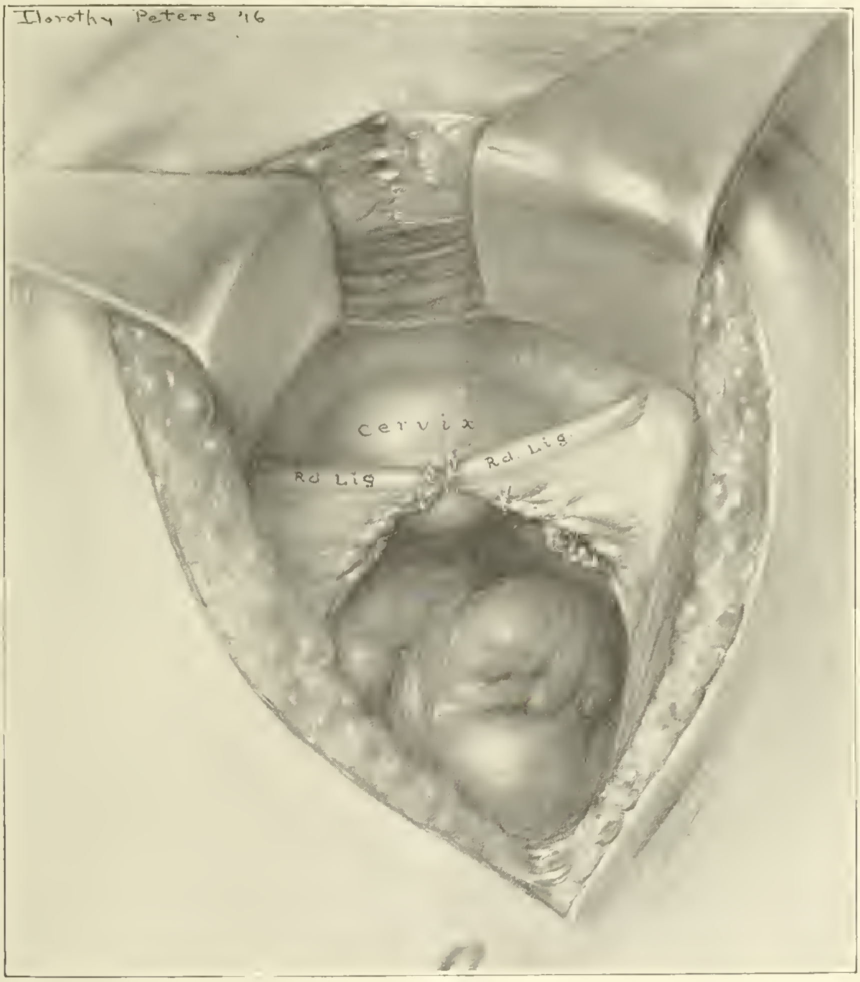

Fig. 7.—Showing the round ligaments sutured to cervical stump to prevent prolapse of cervix into vagina.

Two of our patients developed acute obstruction of the bowels due to a loop of the small intestine becoming adherent to the cervical stump. This occurred when we were using carbolic and alcohol treatment of the cervical stump. It is my belief that sloughing occurred which favored these adhesions. Our plan now is simply to mop off the cervical stump with a weak bichlorid solution. Both of these patients were operated on early during the obstruction; one recovered and one died.

In the past six years we have performed 373 operations of hysterectomy. Out of this number 245 were supravaginal hysterectomies, 46 were complete or panhysterectomies, and 82 were vaginal hysterectomies. We have had five deaths in the series, or a mortality of 1.3 per cent. In the series of 245 supravaginal hysterectomies this one death, the case already mentioned of acute obstruction of the bowel, was due to an adherent coil of the ileum to the cervical stump.

Among the 82 vaginal hysterectomies there were two deaths, one from general peritonitis, and one from pulmonary embolism two weeks after operation.

Of the 46 panhysterectomies there were two deaths, one from pneumonia on the fourth day, and one from postoperative ileus. Excluding the one unavoidable death from pulmonary embolism the operative mortality for the series is less than 1 per cent.

Since reading this paper we have performed 95 operations of hysterectomy with two deaths.

SURGICAL TREATMENT OF THE PROSTATE *

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The history of the surgery of the prostate does not date back as far as that of the surgery of many other organs. The results following surgery in the early days were often unsatisfactory in patients who survived the operation. For such reasons, the development of this branch of surgery has not been especially rapid, and various types of operations and methods of operating have been advocated and tried.

A satisfactory etiology has not been offered to explain the development of the fibro-adenomatous hypertrophy which is by far the most common pathologic condition. I shall discuss in this paper some of the points dealing with the surgery of this type of benign enlargement occurring in the prostate. Fibro-adenomatous hypertrophy probably describes the pathologic lesion better than any other term, although I am convinced that the enlargement in the prostate bears the same relation to that gland that many other neoplasms bear to the glands in which they arise. The term prostatectomy is incorrect in the sense of removing the gland. I have demonstrated many times that the tissue we leave and which forms the so-called capsule is prostatic tissue. The enlargement which is removed in performing the operation is enucleated from the gland in much the same manner that an adenoma is removed from the thyroid or a fibroid tumor from the uterus. While the lesion apparently begins in the so-called median or lateral lobes, I believe that most often the enlargement itself occurs as a single lesion and is not divided into lobes. At least it is certain that in the transvesical enucleation of the enlargement it will usually be removed in one piece.

A considerable part of the early surgery of the prostate was done in England and France, though I believe there can be no question that it has advanced farther in this country than elsewhere. The valuable work done in several of our clinics on the preliminary preparation of the patients for operation, the development of accurate technic, and the proper aftercare has greatly reduced the mortality and established very satisfactory results.

The cautery operation as advocated by Bottini and others, was at one time employed considerably, undoubtedly because of the high mortality following other methods of operating. This is probably seldom if ever used now.

The punch operation as devised by Young[1] undoubtedly is very useful in selected cases, especially in the type of small, hard, fibrous enlargement which is frequently difficult to remove otherwise. The punch operation is not a simple procedure; it requires considerable skill to perform it accurately. Open operations will be required afterward on some of the patients who have been operated on by this method.

In the development of operations for the removal of the enlargement from the prostate, much controversy arose between advocates of the perineal and the suprapubic or transvesical method of operating. While most surgeons are now performing the suprapubic operation because of the assured functional result, nevertheless many are employing the perineal method on account of the claim of lower mortality. The transvesical operation is technically easier to perform and is not liable to be followed by complications such as injury to the rectum and permanent fistulæ which occasionally follow the perineal method. Furthermore, the transvesical is a much more accurate and definite surgical procedure, since it is possible to inspect the inside of the bladder and perform each step of the operation under the guidance of the eye. In operating through the perineum,

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* Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

1. Young, H. H.: A New Procedure (Punch Operation) for Small Prostatic Bars and Contracture of the Prostatic Orifice, Jour. Am. Med. Assn., 1913, lx, 253-257.

the condition of the bladder and the extent of the median part of the enlargement must be determined by previous cystoscopic examination or by the finger introduced into the bladder at the time of operation. If the perineal operation is done, a large incision should be made so that any injury to the control-muscle fibers may be corrected. If the perineal operation has any advantage over the transvesical it is in the lessened liability to infection. The tissues in the perineum are less susceptible to infection than are those in the prevesical space. Infection is such an important consideration in these cases that it is necessary to resort to the perineal operation with some chance of an unsatisfactory functional result or else to develop a definite transvesical technic, which, with the aid of other improvements, will control the factor of infection. Infection in itself may not be especially evident locally and may not seem severe, though it apparently has a characteristic effect and sometimes a most serious outcome. To illustrate what is meant by this characteristic effect, I should like to compare this condition with other surgical procedures, for example:

A patient at the prostatic age, having cancer of the stomach or of the colon, is to be operated on for one of these conditions. The operation would probably require an hour's time; it might mean the soiling and infection in the abdominal tissues, and yet a very large percentage of such patients recover after this more serious operation. If, however, the same patient should have retention of urine during his convalescence so that catheterization were necessary, recovery would be greatly retarded, and in all probability if death ensued it would be owing to this disturbance, which autopsy would show to be due to infection in the genito-urinary tract, rather than to the effects of the operation on the stomach or colon. It would seem that the patient with prostatic trouble coming for treatment, already has some infection or at least permanent injury of his kidneys, and that the elimination of certain toxins through the impaired kidneys may result very seriously. The mortality in prostatic cases is owing largely to uremia, brought about by an infection which throws the elimination of toxins to already damaged kidneys.

The degree of infection in the perineal or prevesical tissues may not seem great, and yet the general effect is pronounced. A two-step operation has been advocated by some surgeons because of the importance of avoiding infection. I do not believe this is often necessary or advisable. It is most important to carry out preliminary preparation in a large percentage of the cases, a measure which has done more for the surgery of the prostate than any other one factor. Preparation consists in ridding the pation of residual urine, cleaning up the infection, and increasing resistance as much as is possible. The withdrawal of residual urine and the preparation of the bladder by the use of the urethral catheter is preferable to preliminary drainage of the bladder through the prevesical space. In some cases it is impossible to pass a catheter, and in others large stones in the bladder may complicate the condition so that it may occasionally be necessary to perform the operation in two steps. Serious conditions may arise and seemingly unfortunate results follow urethral catheterization, though I feel certain that there will be much more frequent and more serious trouble following the drainage through a suprapubic incision. After the bladder has been opened and drained, and a sinus has persisted for some time, it is difficult to do an accurate operation through the opening without greatly enlarging it, and if the opening is enlarged the other tissues are immediately exposed to infection. If the gland is large, it may require considerable extension of the incision in order to remove it. If a drainage operation has been performed previously, the prevesical tissues will be firm and resistant and it may be difficult to reach the lower part of the enlargement. This difficulty may be partly overcome by introducing the finger or some kind of an elevator into the rectum, thereby lifting the gland up into the bladder. However, I believe this should be avoided whenever possible because it may invite infection and necessitate a much deeper anesthesia than is otherwise required in such cases. It is seldom necessary to employ this procedure in doing the one-stage operation, as the gland will be readily elevated as soon as the enucleation is begun. We have never seen injury to the rectum in performing the suprapubic operation.

The nature of the infection is not easily determined. The colon bacillus certainly plays a very important part. This bacillus may be derived from the urine of practically every prostatic patient. If it is not present on the first examination it is certain to become evident after any form of treatment has been instituted. The urine may be free from organisms on the first examination and apparently it makes no difference whether the treatment is begun by interval catheterizations, in-dwelling catheter, preliminary cystostomy or a primary prostatectomy. Within a very few days after any one of these procedures colon bacilli will be found in the urine. It would seem as though contamination might account for this at times, though it would scarcely be responsible in every instance. Whether this infection has its origin in the kidney, bladder, or prostate itself, is difficult to determine. Some investigators believe that it is primary in the tissues about the prostate, and that the organisms pass from these tissues into the lymphatics, then into the blood stream, and are eliminated through the kidneys (Crabtree and Cabot).[2] These investigators found colon bacilli in the blood two hours after a chill in a patient who was being prepared by an in-dwelling catheter. There were no organisms in the urine at this time though they appeared several hours afterward. Crabtree and Cabot interpreted this to mean that the organisms were passed from the prostatic tissues into the blood stream and thence to the kidneys. In our own investigations we have found colon bacilli in the urine in practically all cases, but so far we have been unable to get a positive blood culture. We have taken cultures from the blood at all stages of the preliminary, operative and postoperative periods, and at definite intervals following chills, and in each instance the culture was negative. While we are inclined to believe that these infections are frequently transmitted by the blood stream, we have no definite evidence in our cases to support this theory. In our autopsy studies of operative and nonoperative cases, we have learned that often the most severe infection is found in the tissues of the kidney and, furthermore, the kidney may be practically the only tissue infected. This is evidence which makes us believe that the kidney may sometimes be the primary seat of the infection instead of being secondary to some focus in the prostate or bladder.

In addition to the local preparation by means of the catheter, we believe positively that the patient's general resistance to infection has been increased by the use of vaccine. It is our custom to give stock colon vaccine, and we believe that it may not only help the patient to a comfortable convalescence free from temperature and chills, but that it may also be a factor in lessening complications and in reducing mortality. The patients are given vaccines every three days during their preoperative and postoperative treatment. The dosage starts with fifty million bacilli and is increased in the course of nine days to five hundred million, the maximum dose. All patients are required to have three preoperative inoculations; the average number receive about seven. In comparing the records of twenty-three vaccinated patients with twenty-three non-vaccinated patients, it was found that those vaccinated remained in the hospital an average of two and one-half days less and were discharged a half week earlier. The most striking comparison, however, was the fact that there were eleven complications in the non-vaccinated patients to three in the vaccinated.[3]

DATA FROM HISTORIES OF 46 PROSTATECTOMIZED PATIENTS (JAN. 1, 1917-SEPT. 1, 1917)

	Vaccine 23 Patients	No Vaccine 23 Patients
Cases of epididymitis	2	5
Cases of pyelonephritis	1	5
Cases of phlebitis	0	1
Weeks of preoperative treatment	5.5	3
Average number of doses of vaccine (preoperative)	7	0
Weeks of postoperative treatment	4.5	5
Days in the hospital	8	10.5
Average age	66	62

Because of the general condition and the age of patients, the operation has often been performed as quickly as possible. While it seems right that time should be something of a factor in the operation, nevertheless, a definite surgical technic should not be sacrificed in order to complete the procedure quickly. A little more time would be well spent to make sure that the surrounding tissues are not soiled unnecessarily; that the bleeding is entirely controlled, and that the sutures are accurately placed in the tissues so that the urine will drain through the tube without infecting the prevesical space. The technic of the operation is more important than the time consumed. This is also an argument in favor of the transvesical method, as it is possible thereby to make the operation a more definite and accurate surgical procedure than by any other.

We have employed local anethesia in a few instances, and spinal anesthesia in a considerable number, without finding either an advantage. General etherization has been most satisfactory. The anesthesia is not deep and lasts only for a short time. Pulmonary complications very rarely occur in these patients. In addition to the ether, 0.5 per cent. novocain is injected into the prostatic capsule as soon as the bladder is opened. This seems helpful in several ways: (1) It almost entirely controls the oozing during the operation, so there is almost no loss of blood and the field is dry. (2) It helps to free the enlargement from the capsule and in this manner aids in the enucleation. (3) It produces an anoci-association and thus helps to avoid shock.

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[2] Crabtree, E. H., and Cabot, H.: Colon Bacillus Pyelonephritis; Its Nature and Possible Prevention, Jour. Am. Med. Assn., 1917, lxviii, 589-591.

[3] Administration of the vaccine has been done in our clinic by Dr. H. C. Bumpus.

Inaccuracy of technic has been partly owing to the inaccessibility of the region, and we have endeavored to overcome this inaccessibility by improving the exposure. A self-retaining retractor is used which fits into the incision in the bladder and opens the bladder so we are able to see the base and prostatic region. With the retractor in place, after the tumor has been enucleated, it is possible to see any bleeding vessels and catch them with plain catgut sutures. Most of the oozing comes from the torn bladder mucosa, although at times a fair-sized spurting vessel may be seen down in the prostatic capsule. Several interrupted sutures placed to include a little of the bladder mucosa and considerable of the prostatic capsule controls all of the bleeding in most cases. In a few instances only will it be necessary to pack the capsule with gauze, though this should be done in case the bleeding is not well controlled. While this bleeding will always stop of its own accord, it seems to me that it is essential to have absolute control of it. The loss of a small amount of blood in itself is not so important, but it may reduce the general resistance to infection which is so essential to maintain. If the bleeding is completely controlled, if the bladder is not infected, and if the patient is known to bear the urethral catheter well, the bladder may be completely closed and drainage instituted through a catheter in the urethra. The advantage of completely closing the bladder is that it reduces the possibility of prevesical infection. If there is any uncertainty as to the control of the bleeding or the condition of the bladder, a drainage tube should be left in the suprapubic wound. If the suprapubic drainage tube is employed, the bladder should be accurately closed about it, so that all the urine will drain through the tube. The disadvantage of the gauze pack in the capsule is that it allows urine to drain into the prevesical tissues.

In addition to the drainage tube in the bladder, we have recently used Dakin's solution after the Carrel technic in the prevesical space for a few days following the operation. Our supposition is that no infection exists at the time of the operation, and by using this solution we may be able to produce in this space a media in which organisms will not survive. Whether this has been of any distinct value we are unable to say, but it certainly has done no harm and unquestionably we are now seeing less of this sort of infection than formerly.

The principal point in the after care of such patients is to abandon treatment as far as possible and still keep them comfortable. It is necessary to keep the catheter draining; nevertheless, I think it is important to avoid irrigating the bladder. After the first few days, irrigation does no harm, but if employed from the start, it tends to prolong the oozing.

The following is a review of the patients operated on by us between Jan. 1, 1917, and Aug. 24, 1917:

Patients	84
Adenomatous hypertrophy and prostatitis	78
Carcinoma of the prostate	4
Drainage preliminary to prostatectomy	10
(Nine under cocain and one under ether.)	
Two-stage operation	8
(The length of time between drainage and prostatectomy varied from two weeks to two years and two months.)	
Perineal prostatectomy	1
Primary suprapubic cystostomy for prostatectomy	73
Deaths following preliminary drainage	2
(One patient was uremic at the time of operation.)	
Deaths following drainage and prostatectomy	1
(Drained three months previously; capsule not injected or sutured; patient transferred with no benefit.)	
Prostatectomy with removal of stone	5
(Uneventful convalescence; bladder drainage in all.)	
Prostatectomy (diverticulum of the bladder)	4
Diverticulum and prostate removed simultaneously	2
Diverticulum not removed at the time of prostatectomy or subsequently	2
Prostatectomy for carcinoma	4
Suprapubic route	3
Perineal route	1
(Patients with carcinoma received from 200 to 1,200 mg. hours of radium following operation.)	
Capsule injected but not sutured	6
Capsule injected and sutured	69
Capsule packed with gauze	6
Bladder closed completely	6
Bladder drained by a suprapubic tube	81
Prevesical Carrel tube and gauze sponge	69

Secondary hemorrhage following prostatectomy in two cases (eleventh and fifteenth day). In each case the capsule had been injected and sutured and a bladder tube inserted for drainage. Both were primary operations; both patients recovered.

CONCLUSIONS

1. The transvesical operation for the removal of enlargements of the prostate seems to be the most accurate, technically.

2. With great care to avoid infection, the operation can be done as safely, if not more safely, than the perineal.

3. When possible, the preliminary treatment should be carried on by means of a urethral catheter, as it permits a better operation afterward. In some instances it may be necessary to do the operation in two stages.

4. Spending a little more time with the patient under a general anesthetic will permit a less spectacular but a much more satisfactory operation and the results will be good.

The most dangerous disease that afflicts humanity is not smallpox, pneumonia, typhoid, or even tuberculosis, which levies its grim toll on one out of every twelve civilized humans. It is common constipation—not so much a disease in itself as a cause of other diseases.—Edwin F. Bowers.

THE PRINCIPLES OF THE PATHOLOGY OF THE PROSTATE *

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The pathology of the prostate, like that of any other organ, is dependent on certain biological reactions of cells to antagonistic conditions of their environment. The problem, in considering the subject, resolves itself into answering the following questions: (1) what are the antagonistic conditions which involve the prostate? (2) What cells form the organ? (3) How do these cells react to the activity of antagonists? (4) How do the mechanical conditions of the organ affect its function and that of other organs? (5) What simple terminology may be employed to express the reactions in an intelligent, descriptive communication of ideas between individuals who have to deal with the subject?

Although there are many possible antagonists to normal prostatic activity, ranging from direct trauma to most if not all of the existing pathologic organisms, only a relatively few have been described in connection with this organ. These, briefly enumerated, are *Micrococcus gonorrhea, Staphylococcus, Streptococcus, Bacillus coli, Bacillus tuberculosis* and *Treponema pallida.* Descriptions of the peculiarities of reactions produced by each of these would be extremely academic, because practically every textbook describes them in true classical form.

The biological effects of these and other antagonists resolve themselves into the following definite reactions of all cells when in conflict with unfavorable environment:

1. Cytolysis (dissolution) which may be morphologically divided into the following three degrees: (*a*) destruction of the cellular wall, (*b*) destruction of the cellular wall and the nuclear wall, and (*c*) the destruction of the whole cell.

2. Atrophy (reduction of size) which also presents three degrees of reaction, i. e., (*a*) reduction of the cytoplasm, (*b*) reduction of the cytoplasm and nuclear plasm, and (*c*) the reduction of the whole cell.

3. Hypertrophy (increase in size) which occurs in the following three degrees: (*a*) increase of size of the cytoplasm, (*b*) increase of size of cytoplasm and nuclear plasm, and (*c*) increase in size of the whole cell.

4. Neoplasia (cellular reproduction, new growth or regeneration) which manifests itself in three degrees: (*a*) destruction of the differentiated cells plus an hypertrophy of the regenerative cells, (*b*) hyperplasia of the regenerative cells with or without their differentiation into specific cells and (*c*) hyperplasia of the regenerative cells plus migration from normal anatomical environment with or without partial differentiation.

These being the biological reactions of all living cells, it becomes essential to determine just what cells exist in the organ under consideration.

The prostatic gland as an organ of the genito-urinary system consists of the following tissues: (1) glandular tissue, (2) fibrous connective tissue, (3) muscular tissue. To these may be added the tissues comprising the following suborgans which are a part of the gland: (1) arteries and veins which are composed of endothelial, muscular and connective tissues; (2) lymphatics, which consist of endothelial tissue and possibly a layer of slightly modified connective tissue of the stroma; (3) nerves, which consist of nerve filaments and fibrous connective tissue. There are at least four other types of cells which may be found in the gland under normal conditions. These are leukocytes, lymphocytes, eosinophiles and mast cells. Whether or not these are always indicative of a pathologic process is still a disputed point.

The cells comprising the component tissues of the organ under discussion may be spoken of in their relation to the biological reactions in the following terms:

$$\begin{array}{l}\text{Primary}\\\text{Secondary}\\\text{Tertiary}\end{array}\left\{\begin{array}{l}\text{adeno-}\\\text{fibro-}\\\text{myo-}\\\text{endothelio-}\\\text{lympho-}\\\text{leuko-}\\\text{eosino-}\\\text{neuro-}\\\text{angio-}\end{array}\right\}\begin{array}{l}\text{Cytolysis}\\\text{Atrophy}\\\text{Hypertrophy}\\\text{Neoplasia}\end{array}$$

This terminology possesses biological, histological and clinical significance, although it does not represent a terminology which can be utilized as such for clinical diagnostic purposes.

The prostatic gland does not differ from other organs such as the breast in which organ it has been distinctly shown that detailed pathologic terminology when utilized for clinical diagnosis produced an extreme grade of terminological inefficiency.

It has been shown in the case of the breast that there must exist one terminology for the clinician and one for the pathologist, although these two must be parts of a comprehensive and logical conception of pathologic conditions. At present, pathologic terminology is in the same stage of evolution which chemical terminology was in when Lavoisier was forced to invent a new terminology to express his own observation which formed the basis of modern chemistry.

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* Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

In regard to the prostatic gland the structural arrangement of the tissues plus the general biological reactions of cells determines the descriptive terminology for the clinician and pathologist.

Without entering into a detailed anatomical description of the gland it may be stated that the glandular tissue which gives specificity to the organ is a direct outgrowth of the epithelium of the fetal urethra; it has become modified, however, in form and function during this evolution. The cells are arranged around spaces and form alveoli which empty their products of secretion into ducts which become assembled into larger ducts which eventually discharge their contents in the folds of the urethra lying on each side of the colliculus seminalis. During the evolution of this peculiar structural adaptation many (10-40) such ducts have been formed each of which is the unit of the outlet of a system of ducts and alveoli. Each system, therefore, forms an independent part of the organ structurally, mechanically, physiologically and pathologically. It is this structural and mechanical fact with the biological reactions of the cells comprising the systems which give the irregular shape to the various abnormal prostates which are found. Whether or not the antagonistic agents arrive through the urethra circulatory system, the lymphatics or by direct contact with neighboring pathologic organs does not alter this fact.

The specific glandular tissue is supported by connective tissue and is aided in its function by the presence of smooth muscle, the two latter tissues and those of the blood vessels and nerves also reacting according to biological laws to antagonistic agents.

In all reactions, time plays an important rôle, and in so doing may alter the resultant pictures of the tissues and consequently the whole organ. Any one of the fundamental reactions may occur suddenly or gradually in so far as time is concerned, and hence have arisen the clinical terms "acute" and "chronic."

The fact that one or more of the structural groups of the gland may be involved gives rise to conditions which may be circumscribed or diffuse. As a result of the fact that nature reacts to gradual destruction by building up dense, protective connective tissue barriers, one finds that one or more structural groups may be surrounded by a denser fibrous tissue or capsule which differentiates grossly parts of the gland. This has given rise to the conception of tumors in the gland. They are certainly tumors in the sense that they are enlargements, but their presence is nevertheless due to one or more of the fundamental tissue reactions or to the mechanical principle of distention as a result of obstruction to the normal outlets of fluid contents of spaces.

In view of these fundamentals and the fact that cellular reactions are usually microscopic reactions especially in their incipiency and the fact that clinical symptoms resulting from all forms of prostatitis are largely those arising from mechanical interference with the rest of the genito-urinary system, it becomes necessary to consider the fundamental reactions in their grosser aspect of gross effects which will be of service to those who deal with the organ from a macroscopic standpoint.

Aside from those which one speaks of as "acute infections," the clinician and surgeon are interested in two conditions which they express under the terms of "hypertrophy" and "malignancy," both of which terms need some consideration from the standpoint of definition and description.

The term "hypertrophy," as usual in conjunction with the term adenomatous, myomatous and fibromatous, describes an enlargement of the organ which is in reality an hyperplasia or neoplasia which may be of epithelial connective tissue or muscular origin. In fact, in such conditions, there is an overgrowth of the regenerative cells of one or more of these tissues plus a differentiation of the regenerative cells into either glandular tissue, connective tissue or muscular tissue.

In the biological terminology which has been described in this paper "hypertrophy" is a secondary neoplasia or a neoplasia plus tissue differentiation, a condition which may occur in any or all of the structural groups of the organ. From a neoplastic standpoint the condition is clinically benign if differentiation be present. If there is an overgrowth of the regenerative cells without differentiation there is a question as to the benignancy or malignancy. If there is migration of the undifferentiated cells the condition is malignant. Such, from a clinical standpoint, may be grouped as follows:

$$\begin{array}{c}\text{Acute or}\\ \text{Chronic}\end{array}\quad \left.\begin{array}{c}\text{Circumscribed}\\ \text{or Diffuse}\end{array}\right\}\ \text{prostatic}\left\{\begin{array}{l}\text{adeno-}\\ \text{fibro-}\\ \text{myo-}\\ \text{endothelio-}\\ \text{neuro-}\\ \text{angio-}\end{array}\right\}\begin{array}{l}\text{Cytolysis}\\ \text{Atrophy}\\ \text{Hypertrophy}\\ \text{Neoplasia}\end{array}$$

The only pathologic conditions expressed by these terms which are absolutely recognizable clinically are:

$$\left.\begin{matrix}\text{Acute or}\\\text{Chronic}\end{matrix}\right\}\left.\begin{matrix}\text{Circumscribed}\\\text{or Diffuse}\end{matrix}\right\}\text{ prostatic}\left\{\begin{matrix}\\\\\\\\\end{matrix}\right\}\begin{matrix}\text{Cytolysis}\\\text{Atrophy}\\\text{Neoplasia}\end{matrix}$$

Occasionally the clinician may be able to recognize that a malignant neoplasia exists. The rest of the complete terminology can only be filled out by the pathologist.

It may seem strange that the writer has said nothing about carcinoma, adenoma, fibroma, lymphosarcoma, rhabdomyoma, spindle and small cell sarcoma, malignant rhabdomyoma, adenosarcoma, angiosarcoma, myxosarcoma and epithelioma, all of which terms and their indicative conditions have been described in the literature. Briefly, it may be stated that these terms represent conditions which are described in the new biological terminology. They are, to use the language of Pattison Muir in describing the terminology of alchemy, "based on far-fetched fanciful analogies"; in that language the word did not call forth any just and clear idea, the idea did not depict any definite fact.

Perhaps it is too early to make the prophecy that such terms as sarcoma and carcinoma will be relegated to that extinct group of medical terms which embrace such words as emphyma, cancer vulgaris, scrophula vulgaris, ulcer vitiosum and marasmus atrophia.

A modern terminology must be consistent with and descriptive of biological, histological and clinical facts in order to be efficient in this day of efficiency.

Any of the conditions of the prostatic tissues which have been herewith described may be malignant or benign, since both terms are purely clinical and are not histologically descriptive. A benign infectious or neoplastic condition today may be a malignant condition later without any living man being able to definitely and positively state in advance that it will or will not be. It seems wise for the clinician and the pathologist to adhere closely to that which they can see. If this be done no scientific clinician will attempt to utilize a detailed descriptive pathologic terminology for things which he cannot see.

THE TROUBLE WITH HIM

"You had him for a patient once, didn't you?" asked Gaddie.

"Yes," replied Dr. Wise, "just once."

"What was the matter?"

"He didn't pay his bills."—*Philadelphia Press.*

SELECTION OF CASES FOR PROSTATECTOMY *

JOHN B. DEAVER, M.D.

PHILADELPHIA

I take it that few in this audience have witnessed the whole development of the technical side of prostatic surgery. Nevertheless, it is a fact that less than twenty years ago the surgery of the prostate gland was in a much more unsatisfactory, uncertain and unsettled state than is the surgery of the lungs at the present time. The accepted procedure at that time, namely, McGill's partial suprapubic prostatectomy, was admittedly incapable of restoring function to the bladder that had been entirely dependent on the catheter even for but a short period of time.

The alternative method of treatment advocated by those who feared the "atony of the bladder" bugbear of the followers of McGill was the Bottini cauterization. Dissatisfaction with both of these methods was the mother of invention of castration and vasectomy, which lived only long enough to prove their uselessness.

In December, 1900, Freyer of London, opened the bladder suprapubically and did what he then believed, and still maintains after extensive experience, to be a total enucleation of the prostate gland. By the following June he was able to report four such cases to his students, "with complete success in all;" a month later the operation was "submitted for the consideration of the profession at large."[1]

Few problems in surgery have given rise to so voluminous and, in many instances, acrimonious discussions as has the relief of obstructive lesions at the vesical neck. This was true among surgeons before the time of Freyer, which is not to be wondered at; it is equally true today for reasons that should be of great interest to us all.

There is scarcely a phase of surgery of benign prostatic enlargement the personal interpretation of which will meet with universal approval. If you express the opinion that so-called senile hypertrophy of the organ is a neoplasm of fibro-adenomatous structure which creates for itself a capsule in its evolution, as do similar tumors in much less resistant surroundings, others will maintain that the line of cleavage lies between the normal fibromuscular septum and the anatomical sheath. If you attempt to solve the problem of the origin of the adenomatous masses and conclude from your studies that the lateral lobes are the usual source of the intravesical masses, followers of Tandler and Zuckerkandl will prove to their own satisfaction and perhaps to yours that prostatic hypertrophy almost invariably begins and is confined to the middle lobe. If you venture to agree with Pallin that the prostate takes origin from three sets of tubules, Lawsley will show you five sets of these tubules cross-sectioned at every stage of development from their very beginning in the embryo to the last stages of senility. If national pride should inspire you to claim as American the preservation of the floor of the deep urethra with the verumontanum and ejaculatory ducts in the suprapubic operation, someone is sure to turn to page 142 of Freyer's "Surgical Diseases of the Urinary Organs" and there find a description of this technic as employed in England by the author long before. It takes real bravery to advocate the suprapubic as opposed to the infrapubic technic of prostatectomy.

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* Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

[1] Brit. Med. Jour., 1901, I, 125 et seq.

There is, however, a unanimity of opinion among surgeons on one phase of the problem; this is, that the prostatic should be gotten into the best possible condition as regards the functional capacity of his vital organs before operation is undertaken. Technical success in radical prostatectomy was necessary before the selection of cases suitable for operation became the major consideration that it is today. So that while we have developed only approximate technical perfection we are nevertheless free to concentrate on the development of the ideal method of preoperative treatment. Of equal or even greater importance is the development of some means of determining the effects of such treatment so accurately that, barring accidents, the prognosis can be reduced to a mathematical formula.

Mere technical skill is an important factor in the operative prognosis of prostatic surgery, and it is evident from the general average of results throughout the world that perfection in this regard is yet to be attained. Difference in individual judgment alone cannot explain the marked discrepancies in the mortality records of different operators. The surgeon of limited operative experience must, therefore, exercise greater caution in the selection of his cases for operation than his more experienced and skilful colleague. The immediate general operative mortality following prostatectomy in this country is not less than 20 per cent. in contrast to a mortality rate of about 6 per cent. among the leading urological surgeons. In 1905, Whiteside reported that the average mortality among many American prostatectomists was 20 per cent., with only 30 per cent. of complete cures. A similar study was made in 1915, in which the work of thirty-four surgeons was recorded giving data on 1,423 cases. In this latter series about half of the surgeons submitting reports operated on considerably more than half of the 1,423 cases. These are the men of wide experience and the mortality rate in their work is less than 3 per cent. in contrast to a mortality rate of 26 per cent., as reported by the less experienced operators.

As regards postoperative mortality the percentage incidence has fallen from a general average of 70 per cent. in 1905 to 19 per cent. in 1915, while among the more experienced operators it was but 7 per cent. according to the more recent figures.

Incidentally these studies showed that the majority of poor results followed the perineal operation, including 38 cases of fistula or incontinence.

The same is true among English surgeons. In the first series of 100 cases operated upon by Freyer the mortality rate was 10 per cent.; in his last 100 cases it was only 3 per cent., with a general average among 1,000 cases of 5.5 per cent. About the time when Freyer's mortality was slightly over 6 per cent. (in 1908), C. M. Page collected statistics from the records of four London hospitals for the corresponding years and found the mortality rate to be 21.5 per cent. Wade reports a mortality rate of 35.4 per cent. from one of the largest hospitals in Scotland for the same period and states that, during the years 1906 to 1910, 69 patients were subjected to prostatectomy in St. Thomas' Hospital of London, of whom 14 died, giving a mortality record of 20.3 per cent.

If we now assume that these marked differences in mortality following prostatectomy are solely dependent upon differences in technical skill, the causes of death in the several series should vary to a decided degree, but such is by no means the case. Page maintains that "far and away the commonest cause of death is septic absorption arising out of the wound inflicted," but this is at variance with the observations of others. Prostatics do not die because of some extraneous depressant that has been added as the result of operation, such, for instance, as spreading cellulitis, but for the reason that the strain of operation is imposed upon their vital organs when these structures are least able to bear it. Skill, therefore, is a factor in this as in other fields of surgery, but only as concerns the minimum of injury to already injured parts; the lack of skill adds nothing new that might be construed as a lethal factor. It follows, as already remarked, that the less skilful should exercise the greatest care in bringing their patients to the point of maximum resistance before attempting prostatectomy. Now, as a matter of fact, the reverse is actually true. The less skilful, as a rule, exercise the least care in preoperative diagnosis and treatment. It is to this sin of omission rather than to lack of skill that their high operative mortality is attributable.

It has been said that the most obvious things become impressive if they are repeated with sufficient sincerity and frequency. I may be permitted, on these grounds, to present for your consideration some personal views on the preoperative treatment of benign prostatic enlargement.

Less than a decade ago the operability of these cases was based on the results of urine examination, or on a general physical examination and possibly on the results of blood pressure readings. These examinations, especially chemical investigations of the urine, were then and still remain important factors. As statistics accumulated it became evident that, following prostatectomy, kidney insufficiency was "captain in the army of death" that included in its ranks, sepsis, hemorrhage, vascular breakdown, apoplexy, pneumonia, diabetic coma, embolism, and the condition that we now recognize as acidosis.

The overwhelming majority of deaths due to renal degeneration indicated either unavoidable danger of the operation, or a lack of care in excluding hopeless cases, or in undertaking an operation at a time when kidney function was at its lowest level. Accordingly, much attention was paid to the percentage output of urea which was believed to be an approximately correct index of excretory renal function. Before long it was learned that certain types of cases, such as acute complete retention, almost invariably died if subjected to immediate prostatectomy. Suitable preoperative treatment was then found to be efficient in improving these patients to the extent that operation could be performed with comparative safety. That the safety thus created had a real basis was evidenced in the immediate diminution in the incidence of fatal postoperative uremia. Obviously, the kidneys were suffering with remediable changes induced by the lower urinary obstruction; uremia was not, therefore, a necessary incident to arteriosclerosis and other defects of senility. The stimulus that this demonstration gave to preoperative study has resulted in the development of highly efficient methods of preparatory treatment that should be, but apparently have not been, universally adopted. It has likewise led to the introduction of a number of functional tests that are accurate and reliable indexes of the reserve power of the renal epithelium.

The preparatory treatment of prostatics is less complex than might be supposed. Practically all of the improvement possible follows local treatment instituted for the purpose of gradually relieving the bladder and kidneys of the influence of back pressure induced by the obstruction at the vesical outlet. In only the rarest instances do myocardial or valvular defects, irrespective of the renal lesion and uninfluenced by treatment of the latter, exist to render the prognosis hazardous. Eliminating, therefore, certain rare cases of chronic heart and pulmonary disease, late diabetes, advanced interstitial nephritis, antecedent to and independent of the obstructive factor, cirrhosis of the liver, aneurysm, sclerosis of the arteries with extreme elevation of the blood pressure, and actual bacterial destruction of the kidney substance, there are few prostatics that cannot be improved sufficiently to justify prostatectomy with great assurance of complete success.

The essential element of all forms of preoperative treatment in the surgery of the prostate is drainage of the bladder. In infected cases, and the vast majority of cases are infected when they first present themselves to the surgeon, drainage of the bladder not only relieves the results of infection of this viscus, but minimizes the danger of ascending infection of the kidneys. If the latter are already infected, vesical drainage is the most efficient means of relieving congestion and overcoming bacterial influence on these structures. In the treatment of infection, drainage serves an even more useful purpose in restoring the normal mechanics of urinary secretion and excretion. Obstructive lesions of the lower urinary tract affect primarily the secretory activities of the tubular epithelium and induce waste retention with its secondary deleterious influence on the cardiovascular and other systems. How best to institute drainage then is the most important problem in prostatic surgery at the present time. There are those who depend solely upon intermittent catheterization; others advocate the indwelling catheter, while an increasing number of operators favor suprapubic drainage practically as a routine procedure regardless of the severity of the case. It is our method of choice, with certain limitations.

In the first place it is inadvisable to do an immediate cystostomy in individuals whoes resistance is far below par, when there is a possibility of improving their condition up to a certain point by nonoperative measures. This class is made up largely of patients with long-standing obstruction, whose bladders are markedly dilated, and with large quantities of residual urine, oftentimes with overflow of retention, and in whom the catheter has seldom, if ever, been used. Uremia is so often impending in patients of this kind that the anesthesia of itself is too great a risk to assume. Under these circumstances gradual decompression of the kidneys is accomplished by catheterization, either intermittent or continuous, and it will be found that improvement frequently follows up to a certain point and there becomes stationary. The question then arises of doing either a preliminary cystostomy or proceeding at once to enucleation of the prostate. In all doubtful cases of this kind we favor the two-stage operation. Whiteside in his prognostic studies, has failed to show that preliminary bladder drainage decreases the mortality of prostatectomy, although it is our experience that many patients, especially those belonging to the group under discussion, can be safely operated on only in this manner.

In the presence of violent infection with marked concentric hypertrophy of the bladder walls and greatly diminished capacity with little or no residual urine, the subjects of which are usually in wretched general health and the victims of early renal infection, cystostomy should be done immediately, if, indeed, any operation is justifiable.

The mortality in this class of cases is high, whatever line of treatment is followed, but it has been our experience that prolonged suprapubic drainage serves to bring a majority of them to a condition of operability. If rapid and clean enucleation of the prostate is then done the chances of curing the patient are fair. It may be remarked in passing that cystoscopy in this group of cases is a dangerous procedure that should, as a rule, be performed under general anesthesia. My reason for this is that pyonephrosis, usually unilateral, is so frequent an occurrence that to advise prostatectomy without a knowledge of the differential kidney function is unwarranted.

A third group of cases that calls for special preoperative consideration includes beginning hypertrophies, incipient not only as concerns the obstructive factor, but also as regards its secondary effects on the bladder, kidneys and cardiovascular system. I can see no rationality in doing a two-stage operation when the reasons for which the first stage, i. e., suprapubic cystostomy, is usually done are wanting. Borderline cases between those with obvious powers of vital resistance and those with obvious lack of it, call for discriminating judgment, and the best rule is to adopt the safest form of treatment; in my experience it is the two-stage operation.

To determine the fitness of an individual for urological surgery is a matter of functional determination, and the major problem concerns renal elimination. Although the prostatic with normal kidneys is a surgical curiosity, there are few in whom a satisfactory degree of functional power cannot be attained. As an index of the secretory capacity of the kidneys we have in phenolphthalein a means that is simple in its application and among the most accurate of laboratory tests in general. The estimation of retention products in the blood, such as urea nitrogen as indicative of renal activity appeals to us strongly as a practical test. It is less applicable, however, as a routine measure than the phthalein test. Elimination of urea is a specific renal function and abnormal retention of the substance (over 0.35 gr. per 1,000 c.c. of blood[2]) has the same significance as a low output of phthalein. These tests should be employed in conjunction with each other and comparison be made of the results, thus minimizing the possibility of error. They should be repeated often during the preliminary treatment so as to obtain a concise idea of the recuperative power of the renal tissue under treatment. The time to operate is when the level of maximum function is attained and maintained under the routine of hospital treatment. Mortality records are written from the group in which such attainment is impossible; rarely does a patient die whose renal function has promptly responded to preoperative therapeusis.

Acidosis, if marked, is the precursor of uremia, and any degree of retention of acid salts is indicative of uncertain convalescence after prostatectomy. Anemia and tissue-wasting with loss of weight and strength should excite suspicion of the presence of acidosis. The determination of the hydrogen concentration of the blood and the carbon dioxid content of the al veolar air are comparatively simple tests for acidosis that should be used routinely.

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[2] Tileston and Comfort: Arch. Int. Med., 1914, xiv, 620.

Freyer assumes that the hypertrophied prostate elaborates an abnormal internal secretion. Elimination of this through prostatectomy, he says, explains the rejuvenation that these aged patients experience after operation. We believe it may reasonably be attributed to the restoration of normal metabolic processes incident to the removal of the mechanical defect.

Finally, there is that unfortunate group of patients in whom grave lesions antedate the urological defects and exist independently of them. Such lesions are often unsuspected until the improvement expected to follow preliminary treatment fails to materialize, and in spite of a betterment in the renal function, they are contraindications to operation.

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REMOTE SYMPTOMS OF PROSTATITIS AND SPERMATOCYSTITIS *

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Symptoms which are remote from the lesion actually causing them are familiar to everyone; and the importance of constantly bearing in mind the relationship of pain in certain areas to common remote causes of such pain is continually emphasized.

The gastric disturbances so commonly associated with chronic appendicitis, though there may be no pain about the appendix, is a well-known example; also, the referred gastric and abdominal pains due to cholecystitis, and the referred pain in the abdomen due to pleurisy, but so frequently mistaken for appendicitis, are other striking examples.

It is only within recent years that much attention has been given to the important relationship which chronic affections of the prostate gland and the seminal vesicles bears to obscure local and general disturbances. In 1906, Young, Geraghty and Stevens demonstrated the important relationship which these affections bear to persistent back-pain in men. More recently McCrae has called attention to various functional disturbances of obscure origin which were proved to be caused by affections of the prostate gland and the deep urethra. He mentions cases of severe and intractable gastro-intestinal disturbances which were relieved only after remedying the prostatic and deep urethral lesions of which they were the remote symptoms; he also reports cases of severe cardiac distress, and of marked functional disturbance of the general nervous system, and one case, particularly interesting, of acute abdominal pain resembling appendicitis. The very comprehensive paper by Thomas this year is a further verification of the relationship which affections of the genito-urinary organs bears to various remote symptoms.

It is not the purpose of this paper to introduce any new facts, but merely to add the writer's experience in such cases as a further contribution to this very interesting and important subject which is worthy of further study.

The cases studied are classed according to the predominating symptoms. The first group consists of cases characterized by marked functional disturbance of the general nervous system, and includes twenty cases. The common symptoms are headache, irritability, fatigue, insomnia, impaired memory, lack of force of concentration and mental application, mental depression especially characterized by a tendency to worry over trifles, a general pessimistic attitude toward everything, timidity and lack of confidence, anxiety, and in fact, the entire gamut of symptoms commonly seen in cases diagnosed as neurasthenia. These cases were referred because of some genito-urinary trouble of chronic nature, and the nervous symptoms were described by the patient as the history was obtained. Many of the patients laid more stress on the nervous condition than on the local trouble; and it was interesting to find frequently that the nervous symptoms were out of all proportion to the local trouble. The explanation of these symptoms will not be attempted further than to call attention to the rich nerve supply to the prostate gland and the seminal vesicles, including their intimate connection with the sympathetic nervous system. These cases do not belong to that class commonly called sexual neurasthenics, but are a class by themselves.

The following is representative of most of these cases.

Mr. R., aged 40, salesman, was referred to me because of loss of sexual powers. He had tripper many years previous, but denies having had syphilis. The Wassermann reaction was negative. The chief complaint was nervousness, on account of which he had to give up his work one year before I saw him. Five years previously he began to notice a decrease in the sexual powers, failure of memory, and lack of energy. After about two hours of work he would

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* Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

"go all to pieces," become rattled and could not apply himself without great mental and physical effort. There was also marked insomnia, and sleep when obtained was much disturbed. This condition gradually increased until it was impossible to work at all. Examination showed marked prostatitis, but no bacteria were ever found in the prostatic secretion. The seminal vesicles were never palpable. After two months of treatment he was able to resume his occupation; but after six months there was a recurrence, and treatment was then continued for six months, during which time the patient continued at work until completely cured. Local treatment of the prostate gland was all that was done.

A similar case to this was treated for nearly one year without result, until it was finally decided to open the vasa deferentes, and inject the seminal vesicles with argyrol, after which there was a decided improvement in the nervous condition, and a fair return of the sexual powers.

The second group consists of patients in whom referred pains were the predominating symptoms, and includes forty-one cases. Many of the patients had pain which would have easily been called lumbago; others had severe or mild socro-iliac pain; and in twenty the pain radiated along the course of the sciatic nerve; in two of them the pain was purely sciatic, and could easily have been mistaken for sciatica. There were two additional cases in which the patients had acute pain in the renal areas. These were considered as cases of renal colic until renal catheterization and roentgenograms showed no calculus or other renal lesion, but in each there was marked congestion and swelling of the seminal vesicles. Young has reported a number of similar cases, in some of which the patients had been operated on for renal calculus before the actual cause of the trouble had been discovered.

The frequent occurrence of gluteal pain and pain radiating along the sciatic nerve is very striking. Young has called attention to this type of pain as an early symptom in carcinoma of the prostate, in the later stages of which it is more frequent and severe.

In none of the cases here recorded was there any tenderness along the course of the sciatic nerve, a distinguishing point in the diagnosis of true sciatica. The sacro-iliac pain may easily be thought due to sacro-iliac disease, and be thus treated for a long time without result, while the genito-urinary cause of the pain is completely overlooked. Disease of the sacro-iliac articulation may be differentiated by pain and limitation on motion, tenderness over the joint, palpable deformity or abnormal mobility about the joint (the latter condition doubted by some authorities), or it may be demonstrated by the roentgenogram, all of which signs are absent when the pain is due to disease of the genito-urinary organs. It is quite possible of course for the two conditions to coexist independent of each other. When we consider how commonly backache occurs as a symptom of uterine disorders, it is not at all surprising that this symptom should be found so commonly associated with affections of the male pelvic organs; but the fact that the latter affections are so frequently overlooked as the cause of backache furnishes good reason for further study and discussion of the subject.

The explanation of the pain is readily understood when one considers the nature of referred pain in other conditions, and remembers the rich nerve supply to the prostate gland and seminal vesicles. These nerve fibers are derived from the tenth, eleventh and twelfth dorsal, second and fifth lumbar, and the first, second and third sacral segments of the cord, and from the hypogastric plexus.

Two cases of this group were especially interesting.

Case 1.—Patient, aged 27, was referred to me because of cystitis and urethritis. The trouble had existed for five years, during which time there had been three attacks of supposed cystitis. After seven months of treatment he was almost well, the urine containing only microscopic pus, and at no time had there been any swelling of the seminal vesicles, though pus was obtained in the secretion. He was suddenly seized with a sharp pain over the right sacro-iliac joint, radiating along the outer surface of the thigh, which continued for a week, requiring several hypodermics of morphin. The right seminal vesicle was now quite swollen and tender, and three weeks later there developed an acute epididymitis on the right side. After epididymotomy, vasotomy and injection of the right vesicle with argyrol he made a rapid recovery, and was well when last heard from one year later.

Case 2 was quite similar, though the pain was not so acute, and it radiated along the sciatic nerve and to the heel. Patient was treated by gentle massage of the prostate and vesicles without much relief, and after three weeks he was referred to Dr. David Silver because it was thought that there might be some trouble with the sacro-iliac joint or the lower part of the spine. He was somewhat improved after wearing a support for the spine for several weeks, during which time the vesiculitis was not treated. The roentgenogram showed a suspicious lesion in the body of one of the lumbar vertebrae. He came in later complaining of sudden retention of urine the night before, which was found to be due to a marked bilateral vesiculitis. Vasotomy and irrigation of the vesicles with argyrol was followed by a rapid recovery from all symptoms, the urine becoming free of pus in three weeks, and he has remained well one year up to September, when last seen. The case demonstrates that it is well for the urologist to cooperate occasionally with the orthopedic surgeon, and the credit for the results of whatever nature may be shared by each.

A good demonstration of the close relationship which irritation of the seminal vesicles bears to pain in the lower back is seen in many of the cases where vasopuncture and injection of the vesicles is done. I have noted many times that as soon as the medication reaches the vesicle there is a severe pain either in the sacral area or over the corresponding sacro-iliac articulation, and though it ceases after one or two hours as a rule, some cases have had to be given a hypodermic of morphin.

The third group consists of a small number of cases presenting marked gastro-intestinal symptoms, consisting chiefly of flatulence, constipation, acid eructations, dull and sharp pain in the epigastrium and throughout the abdomen. Two of the patients complained also of a sense of constriction of the intestines "as if the abdominal contents were all drawn together" at times (using the patients' description). Associated with the gastro-intestinal symptoms in three cases there were marked cardiac disturbances consisting of rapid heart action and palpitation, and attacks of vertigo. All five patients in this group had had considerable treatment for their stomach troubles before I saw them, and none had been more than slightly relieved.

While being treated for the prostatic trouble no attention was given to treatment of the other symptoms, except that three cases were referred to a gastro-enterologist for examination, and in them the only abnormal finding was hyperchlorhydria. They took no internal treatment whatever during the time they were treated for the prostatitis and vesiculitis.

The gastro-intestinal symptoms were completely gone with the cure of the prostatitis in four cases, and very much better in the fifth, the latter patient having still a slight vesiculitis after over one year of treatment.

The observations of McCrae have been referred to; his cases presented functional disturbances only, hyperacidity being a common association. In concluding his paper McCrae says: "The frequency with which lesions of the prostate and deep urethra are responsible for symptoms elsewhere suggests the necessity of more frequent routine examination of this region."

The occurrence of the gastro-intestinal symptoms associated with genito-urinary affections is frequent enough to arouse more than passing interest; but one must be cautious in these cases that he does not assume too much, and permit such a patient to neglect examination and treatment for his gastric or cardiac symptoms. In these cases the urologist must cooperate with the gastro-enterologist and not attempt to invade a field in which he is a stranger.

CONCLUSIONS

In male patients examination of the prostate gland and seminal vesicles should be a routine procedure; the shape, size and consistency should be carefully noted, and if abnormalities are found they should be given the proper attention. Also, a microscopic examination of the expressed secretion should be made, and all abnormal elements carefully looked for. This should be done, if possible, by one who has had considerable experience in such work.

It is the purpose of this paper to emphasize the frequent occurrence of symptoms remote from the genito-urinary tract, and which may easily be mistaken for other affections unless a proper examination be made. Many supposed neurasthenics will then receive the proper treatment; many cases of supposed lumbago, sciatica, sacro-iliac disease, etc., will be cleared up; and, furthermore, not a few cases of renal colic in which calculus or renal infection cannot be demonstrated will be found due to spermatocystitis.

Gastro-intestinal symptoms, with which are sometimes associated cardiovascular symptoms, occur with sufficient frequency to demand further attention; the explanation of such symptoms remains rather obscure, but furnishes a fertile field for further study.

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DISCUSSION

ON PAPERS OF DRS. JUDD, MAC CARTY, DEAVER AND BAKER

Dr. Edward Martin, Philadelphia: We are grateful to Dr. MacCarty for giving us a terminology which is scientific, which is rational, which even the surgeon of low intelligence can understand, and can apply to the clinical classification of his cases. We are familiar with his work in other directions and we feel an added debt of gratitude for his simplifying our own mental concept of the lesions of the prostate.

Dr. Baker has touched a most interesting topic and one at which we are beginning; that is, the systemic effects of a toxic focus. Doubtless you are all familiar with Fuller's paper, appearing some years ago, concerning the radical cure of cases of so-called arthritis deformans which many surgeons regard as infectious, by finding and ablating a focus of infection in the seminal vesicles; or the prostate itself because these foci are often in the prostate. The difficulty in finding them is often incident to the fact that during their latent periods there is no form of examination, either physical or tactile, which will detect them and in these cases we have to depend to a great extent on the clinical history. Concerning inflammation of the seminal vesicle the pain during and after urination, which characterizes acute exacerbation, is due to reflex spasms of the sphincter. The referred pain of chronic vesiculitis, constant in type, is not infrequently placed in the hip-joint of the corresponding side. With all Dr. Baker's conclusions with reference to pain, my own clinical experience is strictly in accord. Concerning an acute vesiculitis, or subacute vesiculitis, I have no doubt that some hundreds or thousands of young men have had their appendices taken out (to their own good and profit) because they had subacute vesiculitis which, through delicacy, they had refrained from mentioning. Subacute vesiculitis will cause pain, tenderness and rigidity in the right iliac fossa indistinguishable from similar symptoms due to an acute appendix.

Concerning the subject of prostatic enlargement, it is a satisfaction and a pleasure to have this truly surgical condition taken up by surgeons rather than by specialists. They give us a broad picture of the affection and they have that low order of intellect which leads them to the cure of the largest number of patients in the quickest and easiest way, rather than to the determination of nitrogen concentration or urea output. The subject is approached from the rational common sense point of view, and we have the surgical treatment simplified and perfected; treatment which Judd, Deaver and the real surgeons have been teaching for a long time, which is sound and good and life-saving. There are laboratory tests, the value of which I do not underestimate. When they corroborate our clinical findings they give us an assurance in our procedures, which clinical findings alone fail to convey.

Concerning the choice of cases for operation, there is one clinical complex which leads us to believe that a man is not fit for a radical, somewhat jarring operation even though it be done swiftly and with all conservation, and that is a loss of "pep," or "ginger," a loss of appetite, a large loss of weight. This combination denotes renal incompetency.

I am in thorough accord with both speakers to the effect that, associated with a large prostate, the septic symptoms indicate renal involvement. No matter how virulent an inflammation, if it be confined to the bladder, which it rarely is because the lymphatic association is very close between the bladder and the kidney, the man is not hard hit. In the case of these prostatics apparently in perfect health and with clear urine, who are catheterized or cystoscoped, there is often (nor is there any way of surely avoiding it) a prompt and general infection. Two days after the instrumentation the surgeon receives word that "father caught the grip and is chilly." That grip means renal infection and the kidney, competent in the normal conditions, under the added load falls down. The man who, normally cheerful, comes with a history of having become morose and, instead of being a hearty trencherman, of having developed persistent indigestion, is more surely hit than the man who the laboratory says has a lessened alkaline blood reserve, a diminished phenolsulphonephthalein elimination, or oxybutyric or diacetic acid in his urine.

It is not every man who comes with prostatic obstruction who requires radical operation. There are two elements in the obstruction: one is the steady increasing element of mere mechanical obstruction from outgrowth and the other is the varying, changing element of muscular spasm and vascular congestion. The muscular spasm in the early stages is distinctly more dangerous because that is the element which brings on sudden retention. Many patients with prostatic enlargement with frequency and no great residuum, who are troubled by sudden retention, have recovered their "pep" and appetite, and have now gone for years, under supervision, without any more trouble than an entertaining rather than annoying frequency and a few ounces of clear residuum, which hurts no one. Indeed the moderate residual, troubled only by slight frequency, is not necessarily condemned to prostatectomy unless he goes to the specialist. Common sense is what our people, the general surgeons, bring to the specialist, without whom we cannot get along, and he ought not to get along without us.

Concerning the question of suprapubic drainage, some prostatics come to us tortured by pain, tenesmus and an intolerable frequency incident to the muscular spasm secondary to the accompanying cystitis. Under these circumstances if an in-dwelling catheter can be used with comfort, well and good. Very often it cannot so be used; at least I am often not able so to use it. Under these circumstances and while preparing for prostatectomy a suprapubic drainage through trocar and cannula with tight-fitting tube is at times, not always, life saving. I have known these people to wear this tube for years, with the detrusor force of the bladder restored, able to throw out a full stream and objecting to a prostatectomy because of their almost entire comfort. I have known people to wear an in-dwelling catheter for years. In other words we can drain the bladder either above or below and in certain persons this drainage will be clean and comfortable. In some of these patients, tortured by pain, neither in-dwelling catheters nor the suprapubic drainage will help. The pain is a spasm pain. Under such circumstances the radical operation should be performed because life is a hell and the condition is not likely to improve until you destroy the sphincter by operation. That is one of the things operation does, it destroys the internal sphincter, which is mainly a luxury and not essential to control of the urine.

Some years ago I learned from Judd the best way to avoid infection of the prevesical space; that is, by letting it alone, keeping the hands out of it, keeping the instruments out of it and bringing the bladder up and out of the wound, the incision being high, to protect the perfectly vulnerable fat. The bladder will stand almost anything if it be drained. Finally, if suprapubic drainage is used the stitching of the bladder should be so close about that tube that there is no leaking. In the stitching of the bladder it is advocated to turn in a double row. There seems to be a general idea that the anterior wall of the bladder has over it a peritoneal surface. It has not. Since I have adopted the principle of very neat suturing of the raw surface, without turning in, my junction has held longer and better than when I tried a double line of suture. Such a single line of sutures will hold three or five days and after that time the prevesical tissue is safe against infection. Thanks to Judd and others working in similar lines we are lessening the mortality from this cause.

I know of no way of lessening the danger from epididymitis. It is just as prone to occur from catheterization, just as prone to occur from a punch operation as it is from what we call, and never is, a complete prostatectomy. It is often a deadly complication. There is, however, one way and only one way. If under local anesthesia a small part of the vas be excised epididymitis will not occur. In a patient coming to us who has had repeated attacks of epididymitis there is a fair gamble he will have another attack if we operate on his prostate. Under these circumstances I think it wise and conservative to take out a piece of vas. As to whether it is wise to do it in all cases I have my doubts as only a comparatively small percentage develop epididymitis.

Dr. Moses Behrend, Philadelphia: It takes considerable courage to take issue with anything that comes from the Mayo Clinic. If I understand correctly an injection of colon bacillus was given to every patient operated on. I can hardly see the rationale of this procedure. Dr. Judd mentioned some of the complications that may be cured or prevented by the injections. He referred especially to epididymitis and nephritis, but a certain percentage get these complications in spite of any treatment.

There is another point I would like to bring out and that is part of the technic of doing a prostatectomy. The operator at the proper time generally places one finger in the rectum and the fingers of the other hand in the bladder and enucleates the prostate. I have long since given up that technic. A prostatectomy can be done without placing a finger in the rectum and if a finger must be placed in the rectum it is better to get the assistant to do it for you. I believe that colon bacillus infection often is due to improper technic. Concerning the cystoscope, I have not had the bad experience referred to concerning its use before prostatectomy. All the cases before operation are cystoscoped.

I was also glad to hear Dr. Judd assign certain cases to the two-stage operation. I am sure it has its field in prostatectomy. I am also sure that many patients lose their lives because the two-stage operation is not performed, particularly where there are diverticula of the bladder. After the bladder is opened and examined I believe these are the most suitable cases for the two-stage operation.

Dr. Judd, closing: With regard to the point brought out by Dr. Behrend, I may say that we did not start using the vaccines until we found that in every instance, at some time after treatment had been begun, colon bacilli were to be found in the urine. Frequently, cultures made of the urine at the time the patient presents himself are negative for any organism. No matter whether the treatment consists in preliminary urethral catheterization or primary prostatectomy, colon bacilli will be found in the urine within two weeks. We have not observed a single case in which this did not hold true. It was for this reason that we began to use stock colon vaccine in the routine treatment (preliminary). I thank Dr. Martin very much for his discussion.

Dr. McCarty, closing: I want to express my gratitude for Dr. Judd and myself for this very kind invitation to speak to you. We have not given you as much as you have given us and I want to add appreciation of Dr. Martin's work. In doing pathologic work as I am trying to do it we must have cooperation of the clinicians and surgeons. If it were not in the hope of increasing the clinical side of pathology I should not be in pathology but should be in either clinical medicine or surgery. But there is a great field for efficiency from both standpoints. The clinician alone is not to be criticized, the pathologist must bear criticism with him and it is only one who is both clinician and pathologist that will correct many errors which exist in the chronic condition of medical science. I thank you again.

Dr. Baker, closing: The papers by Drs. Deaver, Judd, and MacCarty have been intensely interesting to me, and have been the source of valuable information. I am greatly indebted to Dr. Martin for his encouraging remarks in the discussion of my paper.

POLIOMYELITIS

A STUDY OF THE 1916 EPIDEMIC IN PHILADELPHIA *

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AND
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Owing to the absence of Dr. Weisenburg who is at present unavoidably detained by teaching men in the government service, I have been asked by him to present our study of the epidemic of acute anterior poliomyelitis which occurred in Philadelphia in 1916.

The entire work will not be set before you at this time. For the purpose of this meeting I shall confine myself to a presentation of our conception of the medical aspects of the disease, referring only briefly to the purely neurological. The question of therapeutics will be briefly considered.

METHOD OF STUDY

Seven hundred and seventeen undoubted cases of acute anterior poliomyelitis were studied in the Municipal Hospital. We were fortunate in having the use of a dictaphone, and it was customary for Dr. Weisenburg and his assistants to dictate deductions regarding the cases immediately upon their observation. In this way permanent record was made of the progression of the disease, including many facts which were of great value to us when the records were compiled. After the patient was discharged or had succumbed the hospital histories and the dictaphone notes were carefully analyzed. A résumé of the case was dictated to the dictaphone and subsequently transcribed. For this purpose we used an outline chart, the headings of which are as follows:

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* Read by Dr. Leopold at the joint meeting of the Section on Medicine and the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 27, 1917. The complete paper containing the neurological data is to be found in the Medical Clinics of North America, Philadelphia number, Vol. I, No. 2, Sept. 19, 1917. W. B. Saunders Company.

I. Name................ Address.............. Age........... Sex........... Color..........
Admitted...................... Day of Disease...................... Paralysis Noted..........

II. History—Family History
Previous Medical History
History of Present Illness

III. Physical Examination and Notes of Progress of Case

IV. Special Symptoms
Herpes Enlarged Spleen Leukopenia Rash

V. Fever
a. On Admission
b. Duration
c. Highest Date
d. Exacerbations

Pulse
a. On Admission
b. Duration Above Normal

Respiration
a. On Admission
b. Highest Date
c. Duration Above Normal

VI. Treatment Lumbar Punctures

Date	Amount	Character	Pressure	Intraspinal Med.	Remarks

VII. Intravenous Medication

Date	Amount	Remarks

VIII. Intramuscular Medication

Date	Amount	Remarks

IX. Deductions

It is from a study of these final charts that our statistics are compiled and our deductions are drawn.

SYMPTOMATOLOGY

These may be classified as those of onset, the preparalytic symptoms, and those occurring during the course of the disease in the paralytic stage. These symptoms, of course, merge and become continuous as the disease progresses.

The preparalytic symptoms were carefully compiled and statistically studied in 716 true cases of infantile paralysis. All cases when there was any reasonable doubt as to diagnosis were discarded.

The most striking fact in reviewing these charts was the very great similarity in the records, to such an extent that it was often possible to make a differential diagnosis between infantile paralysis and various other diseases, i. e., scurvy, various types of meningitis, marasmus, etc., by a mere glance at the clinical chart. In other words, the clinical course of the disease runs true to type with remarkable consistency. The fever was moderate, 100 to 103 F.; in a relatively few cases, mostly in very young children, it was higher, but rarely above 104 F. The course of the fever was sustained in type with moderate diurnal variations. Lumbar puncture or intraspinal medication tended to modify the record by causing a reactionary rise in temperature. In most of the nonfatal cases the temperature reached normal by gradual decline on the sixth or seventh day of the disease.

The so-called abortive cases usually had a shorter febrile period. The so-called toxic cases, if they survived, and those which lived through the febrile period usually did survive, sometimes showed a longer febrile period, but uncomplicated cases which showed a longer febrile period than seven days were few. There were many cases which showed a longer febrile period, but these were the cases which had complications, which adequately and entirely explained the continuation of the fever. In the cases with chest involvement, lobar pneumonia, bronchopneumonia and bronchitis were very common complications for obvious reasons, and in the nonlethal cases the temperature reached normal coincidently with the disapparance of the physical signs of such conditions.

Not only are these facts true of the continuation of the febrile period beyond six days, they are equally true of the exacerbations of fever which occurred. Intercurrent infections of all kinds, especially chest complications in cases with involvement of the respiratory muscles, often explained a sudden rise of temperature of variable duration, at some period of the disease after the temperature had reached normal. Superficial infections, abscesses or otitis media were sometimes the explanation; very often, as must be true in this class of patients where artificial feeding was used, a gastro-enteritis explained a sudden rise in temperature. These cases usually cleared up promptly under appropriate eliminative treatment. Frequently sudden rises in temperature immediately followed intraspinal or intravenous medication, and obviously were caused by such manipulations. A very significant fact is *that in practically every case where there was a sudden rise of temperature a careful study failed to reveal any alteration in the clinical course of the disease or exacerbation of the paralysis. I cannot recall a single case, either with or without exacerbations of fever, where the paralysis became more marked after improvement had begun.* Certainly, if these rises of temperature were incident to the clinical course of the disease and part and parcel of it, one would expect it to be reflected in coincident changes in the pathologic processes and, therefore, in the clinical course of the disease.

Because of these facts we did not expect to find and were unable to find cases corresponding to Dr. Draper's "dromedary type."

A paralysis which tends toward increased destruction of function after improvement has been instituted should cause grave doubts as to the etiology being infantile paralysis.

Fever.—Fever was the most common preparalytic symptom, being noted in 649 of the 710 cases where the history was obtained. Remembering that the history was given usually by the family, it may safely be assumed that fever as an early symptom occurred in practically every case.

Pulse.—In the majority of cases the pulse followed the temperature curve and was proportionate to it. During the febrile period there was a rise of about 10 in the pulse rate for every degree of fever. This of course is not at all distinctive, but is true of most febrile conditions.

There was a tendency in the majority of the cases for the pulse to remain disproportionately high for some days after the temperature had dropped to normal. In the ordinary case this occurred for five or six days. In the so-called toxic cases it was often very much longer.

This tendency for the pulse to remain elevated after the afebrile period may be true of certain other acute infections. Therefore, I am unable to state at present whether or not this fact has any diagnostic importance.

Respiration.—During the febrile period the respiration rate in uncomplicated cases was proportionate to the temperature and dropped to normal coincidently with the temperature. The cases with chest involvement, of course, showed a rapid respiratory rate. Often a sudden rise in the respiration was an indication of chest involvement or a chest complication, such as pneumonia or bronchopneumonia. Cases which developed acidosis had a rapid respiratory rate.

Gastro-Intestinal Symptoms. — Nausea and vomiting were observed in 260 cases; constipation in 194, being more common than is usually supposed; diarrhea was observed in 49.

Nervous Symptoms.—Twitching was seen in 31 cases, restlessness in 58, irritability in 6, delirium in 3, stupor in 10, convulsions were observed in 9. It is interesting to observe that of the 10 hemiplegic (encephalitic) cases 3 of the patients had convulsions. It is also worthy of note that many cases admitted during the epidemic with history of convulsions proved on further study to be some type of meningitis.

Respiratory Symptoms. — Sore throat was noted in 20 cases, coryza in 12, cough in 14, sneezing in 10.

Pain.—Headache was noted in 61 cases. Pain in the neck was noted in 16; in the back in 21; in the abdomen in 5, and in the extremities in 1. Pain is probably a much more frequent symptom than this table indicates, because most of the children are too young to express it. It was a very common preparalytic symptom in adults.

Retention of urine was noted in 3 cases. Objectively noted, it was much more frequent. Incontinence of feces was noted in 1 case, although constipation was more the rule than the exception.

Sweating was observed as a preparalytic symptom in 2 cases. This is not in accord with the observation of Wickman and others.

Chills were present in 11 cases, rather a larger number than is usually observed.

Nosebleed was noted in 2 cases.

Objective Preparalytic Symptoms.—The number admitted in the preparalytic stage were relatively few. Practically all of these cases showed stiffness of the head and neck, with pain on motion. There was also rigidity of the back muscles and often retraction of the head. General hyperesthesia was usually present. In the preparalytic stage the reflexes were usually exaggerated, often the Babinski and the Kernig; ankle-clonus was not common. In other words, in most cases the preparalytic symptoms were those of meningeal irritation, and were indistinguishable from a true meningitis.

TOXIC CASES

A certain number of cases, not a very large percentage, were those which were obviously heavily infected. These were classified as the so-called toxic cases.

ABORTIVE TYPE

There were about 12 cases of the abortive type admitted, the symptoms consisting of the usual fever, vomiting, headache, constipation or diarrhea, followed by rigidity of the head and neck and occasionally of the back. Often the meningitic symptoms were marked, the limbs being rigid, there being present besides a general increase of reflexes, Kernig's sign, and Babinski's phenomenon. Lumbar puncture always showed an increase in the quantity of the cerebrospinal fluid with the usual findings. Occasionally weakness was present in one or both limbs, but of a fleeting character. The fever never lasted more than four or five days, the pulse rate was never very great, and the respiratory rate was never increased. The whole course of the disease never lasted more than a few days and paralysis never followed.

TYPES OF PARALYSIS

In Wickman's classification, which has been generally accepted, the following forms are distinguished: (1) the spinal poliomyelitis form; (2) the form resembling Landry's paralysis; (3) the bulbar or pontine; (4) the encephalitic; (5) the ataxic; (6) the polyneuritic (resembling neuritis); (7) the meningitic; (8) the abortive.

In the Philadelphia epidemic not a single case which could be classed as polyneuritic was observed.

Regarding ataxic cases, Wickman states that "although some undoubtedly belong to the bulbar type, there are many others in which the ataxia is not distinctly cerebellar in character and in which all signs of either bulbar or pontine indication are absent." From our observations there is no such thing as an ataxic type of poliomyelitis. There were a number of patients in whom there were distinct cerebellar symptoms, but in all with the exception of one they were in association with pontile lesions. Therefore, if such classification is to be made, the cerebellar type would be much more appropriate than the ataxic.

Spinal Form.—By far the commonest form of infantile paralysis is the spinal type. This is especially true in the nonfatal cases. There is one essential difference between fatal and nonfatal spinal cases, and that is that in the former the chest is almost always implicated, death resulting from respiratory paralysis, whereas in the nonfatal types the chest is less frequently affected.

Landry Type.—The so-called Landry type of paralysis is by no means as distinct as is commonly supposed to be the case, for in many instances it is impossible to distinguish it from the spinal type. The Landry type of paralysis is, of course, most commonly present in the fatal cases, and in these the paralysis progresses so rapidly, death nearly always occurring on the second or third day, that in many instances it is only by a stretch of the imagination that one can distinguish either the ascending or descending Landry types. There are, however, undoubted cases in which there is an ascension and descension of the paralysis. The ascending type is by far the most common.

Of 168 deaths, 84 were the result of the ascending type, 17 of the descending type of Landry paralysis. In 41 death was supposedly the result of the spinal form of paralysis, but in practically all, whether Landry or spinal, death was the result of respiratory involvement.

Bulbo-Pontine Cases.—It is apparent that the bulbo-pontine classification of Wickman can be divided into six groups: (1) bulbar, (2) pontine, (3) pontine bulbar, (4) pontine spinal, (5) bulbar spinal, (6) pontine bulbar spinal.

Bulbar. — Throughout the epidemic a great many so-called bulbar cases were reported, and it was the impression that most of the deaths were the result of such involvement. As a matter of fact, this was not at all true, for of the 168 deaths, in only 26 was the medulla implicated. Of these there were only 2 undoubted cases in which the disease was entirely limited to the medulla oblongata. In both there was difficulty in swallowing with regurgitation of food, with no evidence of paralysis of the limbs, but with increase of the reflexes because of the general meningeal involvement.

The usual bulbar symptoms consisted in difficulty in swallowing; occasionally when there was not so much difficulty there was also regurgitation in food. In other cases there was only a nasal twang to the speech, although this at times accompanied difficulty in deglutition. It is interesting that bulbar symptoms were often either the beginning or termination of the Landry type of paralysis.

Pontine.—There were 22 instances in which the facial nerve alone was involved. In only 1 case did death occur, and in this patient it occurred on the twentieth day as the result of gastro-enteritis.

Encephalitic Type.—There were 4 fatal and 10 nonfatal cases. Usually the symptoms were preceded by convulsions followed by hemiplegia of the same side. The paralysis had the usual characteristics of a cerebral lesion, that is, increased reflexes and Babinski. In addition, in 5 instances there was implication of the spinal cord. Again, there were meningeal complications which caused temporary increase of reflexes and the Babinski on the nonparalyzed side.

Cerebellar Cases.—There was one patient in whom the cerebellum alone was implicated. This was a child of five who had marked asynergy in all of the limbs and trunk, with the usual cerebellar trunkal gait and symptoms. Gradually these cleared up and in about twenty days they entirely disappeared. There were four other cases in which there were accompanying cerebellar symptoms.

Meningitic Group. — Practically all cases of infantile paralysis have a certain amount of meningeal involvement. There were, however, undoubted cases in which there was meningitis alone and in which this was the most prominent symptom. In some there was a passive weakness of the neck muscles or possibly of the shoulder or of one or both lower limbs, but, as a rule, where the meningitis was very great the paralysis was not very marked, and on the subsidence of the meningitic symptoms there was very little remaining paralysis. This was so common that the prognosis in meningitic cases was always pronounced better than in other types. Three distinct types were noted. The most common was that in which there was present the usual symptoms of a general meningitis. There were, however, what we have termed the upper and lower type of meningitis. In the so-called upper types there was retraction of the head and neck with marked rigidity and stiffness of the upper limbs, the lower part of the back and both lower limbs being flaccid. In the lower type the head and neck and upper limbs and upper spine were normal, but the middle and lower spine were rigid, the thighs flexed on the abdomen, legs on thighs, with Kernig's sign, and marked rigidity and resistance whenever either of the lower limbs was moved.

In all of these instances there was a marked increase in the cerebrospinal fluid.

As a result of the study of this epidemic Dr. Weisenburg has made the following classification: (1) the spinal form, (2) the form resembling Landry's paralysis, (3) the pontine bulbar, (a) bulbar, (b) pontine, (c) pontine bulbar, (d) pontine spinal, (e) bulbar spinal (f) pontine bulbar spinal; (4) encephalitic; (5) cerebellar; (6) meningitic; (7) abortive.

RECESSION OF PARALYSIS

Certain definite facts can be gathered regarding the recession of the paralysis.

There was not a single case in which the paralysis increased after improvement had been initiated. This, I believe, is of the greatest importance, for there have appeared statements in the literature of delayed and recurrent cases in the same attack.

Facial cases cleared up with considerable rapidity. This was true of the peripheral type. It was not equally true of the facial palsies which were a part of a hemiplegia. Regarding paralysis in general, it may be said that the limb first affected was usually the most extensively involved, and at the time of the patient's discharge was the one most extensively paralyzed. This may mean one of two things: either that the limb first affected was most extensively involved, and therefore recovered more slowly, or that, although the rate of recovery was the same, there had been greater and more prolonged destruction, and therefore there appeared to be greater involvement at the time of discharge. Regarding paralysis of the extremities, it may be said that paralysis of the arms cleared up more rapidly than paralysis of the legs. I mean that the actual rate of improvement was greater in the arms.

Distal muscles of any particular extremity cleared up more rapidly than the proximal muscles. Perhaps here the rate of improvement was the same because, as a rule, the proximal muscle groups were first and most extensively involved. Therefore, when improvement did occur it would manifest itself to a greater degree in those muscles least affected.

I believe, therefore, that the rate of improvement in any given extremity may be the same, but that there is a more rapid improvement in the upper extremities when contrasted with the lower extremities.

Acute anterior poliomyelitis is a specific infection which runs true to type with remarkable consistency. I believe it is as typical as lobar pneumonia. The duration of the fever is practically constant, six or seven days, excepting the abortive and toxic cases. The paralysis almost always comes on on the second or third day. The disease practically always begins the same way with fever, headache, stiff neck, spinal tenderness and rigidity, general hyperesthesia and symptoms of gastro-intestinal disturbance. In other words, the symptoms are indistinguishable from a true meningitis and are due in fact to a true meningitis. A clear spinal fluid of excessive amount and under tension, completes the picture. In this stage the reflexes are exaggerated. Following this comes the stage of absent reflexes, flaccidity and paralysis. Muscular weakness with increased reflexes can coexist if the meningitis does not subside. With the subsidence of meningitic irritation, flaccidity, absent reflexes, and paralysis is noted. In the entire epidemic we did not see one case of the classical textbook description of a child going to bed well at night and waking up the next morning with a flaccid paralysis. If such cases do exist, then the type of infection in this recent epidemic must be different.

TREATMENT

The patients admitted during June, July and August all received urotropin. In these cases lumbar puncture was done only for diagnosis and was seldom done more than once. Most of the cases admitted in the latter part of August and in September, October and November had repeated lumbar punctures for therapeutic as well as diagnostic purposes. Many of these cases received intraspinal injections of adrenalin chlorid 1 : 1,000, immune serum, normal serum, one, or both, or all under various conditions.

It is entirely impossible to draw deductions regarding the efficacy of treatment from statistics of cases.

Many extremely ill patients survived and made a good recovery without lumbar puncture or any intraspinal therapy, and many patients apparently not so ill died despite any or all of these procedures.

But one cannot help but form certain impressions from a study of a large number of cases. Certainly if any treatment avails, it can best be judged by its use in the preparalytic stage. It is our belief that in this stage prompt and frequent lumbar puncture is valuable for the mechanical relief of pressure and for symptomatic relief. For example, in a boy of 15, seen in the preparalytic stage with great stiffness of the neck, spinal tenderness and severe headache, following prompt lumbar puncture, where 50 c.c. was removed under great pressure, there was within five minutes a total relief of headache and rigidity of the neck, and these symptoms never recurred throughout the entire subsequent course of the illness. Whether or not lumbar puncture has any value in lessening the ensuing paralysis I am unable to state. I do not believe it is of any value in the absence of pressure and meningitic symptoms. In other words, I do not believe it is of any value after the case has reached the stage of absent reflexes, flaccidity and paralysis. The persistence or recurrence of meningitic symptoms is an indication for its immediate and frequently repeated employment.

Intraspinal Adrenalin. — This was used, as advocated by S. T. Meltzer, in a considerable number of cases. I am not sure of its value. We do not believe that there has been any conclusive clinical evidence to show that it has any effect on influencing the course of the paralysis. Possibly recovery of function after damage has ensued may be hastened by its use. Quite a few cases reacted badly following its use, especially after the second or third injection. In these cases it was considered wise to discontinue it entirely.

Immune Serum.—As is true of all therapeutic procedures, the value of this one can be best judged in the preparalytic cases. For example, a boy, aged 6, was seen in the early preparalytic stage, as evidenced by meningitic symptoms and exaggerated reflexes. Immune serum was used immediately, both intraspinally and intravenously. Despite this the child succumbed to a typical ascending Landry type of paralysis, dying seven hours later from intercostal and diaphragmatic paralysis. Of course, conclusions cannot be drawn from a few cases. This case is cited because it seems to be especially appropriate.

We do not believe that immune serum as used has proved to be of value. Possibly it should be used in very much larger doses than have been employed by us. This is certainly worth trying.

Various other agents were used at different times, among which may be mentioned urotropin by mouth, normal serum (intraspinally and intravenously), mercuric chlorid solution (intraspinally), and solutions of arsenobenzol intravenously. We are not convinced of the value of any of these agents.

1909 Chestnut Street.—1428 N. Broad Street.

CAUSE OF "MILKY" SEROUS EFFUSION OF VERY LOW SPECIFIC GRAVITY

Weber and Schmidt have previously reported on the occurrences of a milky effusion in a case of syphilitic nephritis. In the present article in the September *International Clinics* they present several additional instances of this unusual condition occurring in non-syphilitic subjects. In addition to the milky appearance of the fluid it has a very low specific gravity, being very little above that of water.

POLIOMYELITIS

THE IMPORTANCE OF ITS EARLY RECOGNITION; THE VALUE AND TECHNIC OF SPINAL PUNCTURE *

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PHILADELPHIA

In poliomyelitis we encounter a disease which lacks clinically definite and diagnostic symptoms and is consequently difficult to recognize early from clinical symptoms alone.

Since, however, it is now a well-established fact that poliomyelitis is contracted by contact with a preexisting case, probably through the discharges from the mucosa of the nose and throat, or from the intestines, it becomes absolutely necessary to arrive at a definite diagnosis at the earliest possible moment. Furthermore, it appears that there are many who harbor the organisms and are therefore carriers without themselves presenting symptoms of the disease, while still others are so slightly ill (i. e., nonparalytic cases) as to escape the notice of their ordinary caretakers until the serious illness of a member of the household calls to mind the almost unnoted indisposition occurring earlier in another member of the family.

The early diagnosis is important not only as a preventive measure to permit of early isolation, but also to make possible the early institution of suitable treatment.

The clinical picture, if not diagnostic, is frequently strongly suggestive. In general, there is a febrile period of short duration, i. e., twenty-four to forty-eight hours. Accompanying this fever which may be slight (100 to 101 F.) or frequently more marked (103 to 104 F), there is malaise, restlessness, dry mouth, vomiting and intestinal disturbances similar to those observed in summer diarrhea. Sometimes drowsiness may replace restlessness. Tonsillar and pharyngeal inflammation are frequently noted. The glazed sclera and cornea, with circumorbital puffiness, are often present in striking contrast to the bright, shining eye seen in other acute infectious fevers. The face bears an expression of apprehensiveness and resentment as one approaches the patient. The child is easily annoyed by the examiner and whines and shrugs the shoulder resentfully.

Pain as evidenced by headache and by aching of bones and muscles is frequently complained of and muscle tenderness is often noted. Muscular twitchings, when present, bespeak an overstimulation of the system. The "stiff neck" and pain on eliciting the Kernig's sign are due to the anterior flexion of the spine which the child resists. This has led to the "spine sign" which is one of great importance. The reaction of the tendon reflexes are most irregular. Palpable superficial lymph nodes are usually demonstrable.

Rapid respiration, profound stupor and marked constipation are usually found in the second phase of the disease.

The blood shows a leukocytosis (15,000 to 25,000) which is largely a polynucleosis, as there is an increase of polynuclear cells which amounts to 10 or 15 per cent. above normal. The lymphocytes are decreased to from 15 to 20 per cent. below normal.

It is to the cerebrospinal fluid obtained by lumbar puncture that we must look for the definite picture which enables us to make an early and correct diagnosis. The exact appearance of the fluid depends on the stage of the disease. Early in the disease the fluid is clear with increase of both pressure and volume. Globulin may or may not be present. There is an absence of cellular elements. Later (frequently in eight to twelve hours) a subsequent puncture reveals a fluid which may be clear or one in which the clearness is somewhat less marked. It is rarely turbid. The pressure is less than at the former examination. The cellular elements are increased (10 to 2,500 per cubic millimeter). Globulin is increased.

The polynuclear cells found in the spinal fluid are not those met with in the blood, but are the wandering tissue cells, or clasmatocytes of Marchand. These polynuclear cells are rapidly replaced by small lymphocytes with the result that in twenty-four to thirty-six hours these latter cells represent over 90 per cent. of the total number of cellular elements found in the spinal fluid.

Lumbar puncture and examination microscopically of the spinal fluid serve not only to establish the early diagnosis of poliomyelitis, but according to Draper is of some prognostic significance. In his recently published monograph Draper refers to this as follows: "It is possible that spinal fluid taken in the first 12 to 18 hours following meningeal involvement may have some prognostic significance depending upon the number of cells per c.mm. Whatever indications may be suggested by differences in cell counts lie at the extremes, rather than

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* Read at the joint meeting of the Section on Medicine and the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 27, 1917.

within the more average ranges. Thus cases with cell counts below 100 rarely developed paralysis, while cases with counts of 500 or over frequently did. Practically every fatal case showed more than 600 or 1,000 cells per c.mm. These figures apply to fluids taken within a few hours after the occurrence of meningeal invasion as determined by the history and clinical observation."

TECHNIC OF LUMBAR PUNCTURE

Patient lies on the right side with thighs flexed and head bent forward to separate the spines and laminæ of the vertebræ. A point on a level with the iliac crests in the median line between the third and fourth lumbar vertebræ is selected as the point of election. A fine trocar and cannula, called a lumbar needle, is employed. Strict asepsis is obligatory. The operator should surgically cleanse his hands. The skin should be surgically cleansed and painted with iodin. The needle should be boiled. Pain from the puncture is usually less than from the flexing of the thighs and head. An anesthetic is usually not necessary. Local anesthesia or a few whiffs of chloroform may be employed. The child should be carefully watched for fifteen or twenty minutes after the puncture is made. The canal is found about three fourths to one inch below the skin surface, and the needle should be inserted at a right angle to the skin surface. When the needle point is in the canal the trocar is withdrawn. A dry puncture signifies that the needle is not in the canal or that the fluid is so thick it will not flow through the needle. A microscope and counting chamber should be at the bedside, and after a few drops have been withdrawn for examination the trocar should be reinserted to stop the flow of spinal fluid and the needle left in situ.

If treatment is indicated by the examination of the fluid microscopically, 20 c.c. of fluid is then allowed to escape from the spinal canal and 10 or 15 c.c. of immune serum is injected by the gravity method. After the needle is withdrawn the point of puncture is sealed with sterile cotton and collodion.

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DISCUSSION

ON PAPERS OF DRS. WEISENBURG AND LEOPOLD AND SINCLAIR

Dr. Charles K. Mills, Philadelphia: To a considerable extent I took part in the clinical work on which the paper of Drs. Weisenburg and Leopold is based, especially at the Municipal Hospital in Philadelphia and in districts around Philadelphia where the cases were collected. I do not see much opportunity for adding anything to the presentation. It is interesting to note that we have had few elaborate papers on the symptomatology of poliomyelitis, although so much has been written on the subject. This paper and another prepared in connection with the research of which it was a part are among the best that have come from the American profession.

With regard to one or two matters I differ somewhat from the writers of the paper. I believe there are true polyneuritic cases. I have seen these cases in the epidemics described and in 1907 and at other times. These cases are, however, comparatively rare, not so common as at one time supposed. The points giving rise to the view that they existed in considerable number are usually due to the presence of meningitis or cerebrospinal toxemia. The cerebral cases are a little more frequent, I believe, than is indicated by the statements of the paper. It might be well, instead of referring to "spinal" cases and "Landry" cases, not to lose sight of the fact that, after all, the Landry cases are instances of ascending spinal infection.

I am not a strong believer in the doctrine of personal contact as the chief factor in transmitting the disease as indicated by Dr. Sinclair, Dr. Flexner, and others. I have had a very large experience with poliomyelitis in private practice and hospitals; I have studied many of the wards of Philadelphia and the surrounding country for miles during the recent epidemic; and I have examined the records of the cases and their relation to other cases. I also sent one of our group to West Virginia to investigate the winter epidemic there. My own experience, and the experience of others who worked with or for me, has been that it has not been so absolutely demonstrated that human contact is the only or even a very frequent cause of the spread of this disease. I know this is an important assertion to make but I believe it is correct. I am not prepared to say that the disease is never transferred by human contact. Of course the association of individuals in the neighborhood where the disease exists would lead to the occurrence of the disease among others in the same family or in the same vicinity. I think there has been improper quarantine in some cases in the care of this disease, especially in connection with the interstate quarantine. I am in favor of quarantine but not in favor of the methods in which in our state and elsewhere it has sometimes been enforced. However, I know this is rather against the common idea and it may be supposed by some to speak against the interests of the community; in other words, taking the ground that it is better to have undue quarantine and restrictions rather than not to have enough.

Dr. B. Franklin Royer, Harrisburg: The symptomatology and the particular clinical results noted in the splendid paper of Drs. Weisenburg and Leopold confirm the recorded observations of previous classical studies. Practically every sign and symptom mentioned have been noted in state-wide epidemics in this country, in Norway and Sweden, in splendid tabulations of clinical data by Morse and Lovett during the epidemics in Massachusetts in 1909 and previously, and similar tabulations by the commissioner of health in Pennsylvania during the epidemic of 1,076 cases in 1910. The tabulations made in Pennsylvania were based on bedside notes of five hundred physicians in the commonwealth and on complete epidemiologic records of all cases occurring in that epidemic.

Epidemiologic studies of poliomyelitis throughout America and the studies made by public health authorities will not at present sustain the position taken by Flexner and his New York colleagues, concerning the transmission of this disease through personal contact. I agree with Dr. Mills that only a very small proportion of cases can ever be traced to direct contact with other known cases and that only a very small proportion of house contact cases can by lumbar puncture be proved to have had an abortive type of the disease. Every now and then we do find in a dwelling with a case of poliomyelitis one or two, sometimes more, children or adults giving a history of digestive disturbances, fever and malaise during the time of the illness of the paralyzed child. Lumbar puncture will show in some of these contact cases a cell count above 10 or 15 per mm. Perhaps such individuals have had the same disease process attack the organism as that which has attacked the organism of the child showing paralysis.

I am not in a position definitely to prove my belief, held firmly as early as 1910 and announced as in agreement with the views of Frost and Richardson at that time, that probably more cases of poliomyelitis occur in a community without paralysis than develop paralysis. I believe that the toxic poison responsible for the nerve change and paralysis is comparable in some respects to the toxic poison found in diphtheria and that it causes a similar nerve change. We all know that the toxin of diphtheria passes through the lymph and blood circulation of every person having diphtheria and we also know that only a few such persons developed paralysis even before the days of antitoxin. Would it not seem like a reasonable analogy to presume that many of the children in a community and numbers of those in the same households have a disease process afflicting them similarly without paralysis and that in subsequent outbreaks the reason that the particular community so affected has shown little tendency toward an epidemic is because the young of such community have evolved some degree of immunity through this more or less silent form of attack.

In 1910 we had certain communities showing a greater epidemic prevalence than was exhibited anywhere in 1916 and these communities almost escaped during 1916. I refer particularly to sections of the Lehigh Valley and of Lancaster County. Sections in the northwestern part of the state, Erie and vicinity, where we had a considerable outbreak in 1915, and sections of the Lehigh Valley and of Lancaster County, hard hit in 1910, were scarcely touched last year. Something seems to have been left in the wake of one epidemic that protected against subsequent outbreaks. Such records may be duplicated in practically all sections of the world afflicted with epidemics of poliomyelitis.

There is something peculiar about the way the disease is transferred from one community to another. For instance, in 1907 New York City had an outbreak of about 2,500 cases, practically the same amount of travel existing between New York and Philadelphia, with the exception of automobile, as occurred in 1916 and yet in 1907 Philadelphia remained practically free. In 1916 Philadelphia had a severe outbreak follow in the wake of New York's outbreak.

I agree with Dr. Sinclair thoroughly that lumbar puncture should be performed when there is a suspicion of the disease and, when permission may be secured to do it, and I would insist on it during an undue prevalence of the disease. I am not sure, however, of the wisdom of subjecting to lumbar puncture a child who has had fever of 102 or 103 F. for a day or two and is restless, unless cases of definite paralysis have occurred in the community. Lumbar puncture is not without danger and even those who have used it extensively regard it as of most value in ruling out the various types of meningitis, such as the meningococcic, the streptococcic, typhoid, tuberculous, etc., and in ruling out meningismus. We are coming to accept lumbar puncture as of more and more value in diagnosis, yet the significance of cell counts has not yet been fully determined, nor have we determined what a meningitis, traumatic in form, might show. Lumbar puncture as an aid in relieving pressure accompanying brain injuries will enable us in a little while to obtain some definite data and to draw tentative conclusions concerning cell changes in the fluid.

As to technic, I would urge where possible that the child be placed in a sitting posture. It is much easier for the operator and no more distressing to the child. It is easier to flex the spine if the child is seated on a narrow table or bed with the feet hanging over. The child should face the nurse, the nurse taking the head under her arms, reaches around the child, holding its hands in front of the abdomen, and placing just enough gentle pressure on the shoulders to prevent the child from struggling and to flex the spine. If the table is low, the operator may kneel on the opposite side; if high, may stand and plunge the needle directly into the tissues and through the coverings of the cord. I choose the same location mentioned by Dr. Sinclair but prefer to go a quarter inch to the left or right of the median line in order to lessen the chances of having the spines of the vertebrae impinge and divert the needle, and of diverting it into the intravertebral cartilages.

The authors of both papers have contributed classical communications to the literature of this disease.

Dr. Myer Solis-Cohen, Philadelphia: It would probably make the description of the epidemic of poliomyelitis in Philadelphia in 1916 more nearly complete if I were to add the results of some bacteriological and immunological studies made by Drs. George D. Heist, John A. Kolmer and myself at the Jules E. Mastbaum Research Laboratory of the Jewish Hospital and the McManes Laboratory of Experimental Pathology of the University of Pennsylvania. From two of the patients who died at the Philadelphia Hospital for Contagious Diseases in 1916 the globoid bodies were isolated. These were shown to Drs. Flexner and Amoss who confirmed the findings. From these same patients also was obtained the streptococcus which we have shown to be identical with the streptococci described by Rosenow of Rochester, Mathers and Nuzum of Chicago and Kolmer of Philadelphia. We obtained cultures from all of these experimenters and showed that they were practically identical. The streptococci, however, are quite different from the globoid bodies; they grow differently and differ markedly in their appearance. The streptococci are many times larger than the globoid bodies and they stain differently. We have stained on the same slide the two organisms and with many stains. In the cases in which the streptococcus appeared in the culture of the globoid bodies, on a second filtering the streptococcus would disappear from the culture and never reappear. Dr. Heist and I tested forty patients in the epidemic of 1916 with the streptococcus to see whether they gave immune reactions. A large percentage gave a high opsonic index with the streptococcus just mentioned. A preliminary note of these investigations was made in the *New York Medical Journal* of September 1 and the complete article will be published later in the *Journal of Infectious Diseases*. I have with me a culture of the globoid body and a number of slides of both the globoid bodies and the streptococcus which can be seen after the meeting.

Dr. Edgar M. Green, Easton: I think these papers will add greatly to the interesting literature on this subject. I agree very strongly with what Dr. Mills has said regarding contact carrying in these cases. My home is in Easton and on the direct line of travel from New York City. Last year during the pronounced epidemic in New York City we had but three cases in Easton. Two of these came from New York and possibly may have had the initial symptoms before they reached Easton. There was but one other case which occurred in Easton, a city of 30,000, and that one case was a virulent one. The patient survives with paralysis of both lower extremities but had not been in contact with anybody from New York, nor away from Easton. Of course, one or two swallows do not make a summer and I do not mean to say that these cases prove anything. There were, however, three or four other cases seen in consultation in the most isolated corners of Northampton County and vicinity. One case occurred about a mile from the village of Bushkill, Pike County, eleven or twelve miles from any known case of poliomyelitis. The child had not been away from home and lived a long distance from any other house. Another case which I saw was in the northwest corner of Northampton County, also in an isolated little house some distance from any other and there had been no contact with other children. Another case I saw in Bethlehem where there had been no known contact with outside cases. These cases do not prove a great deal but they do seem to show that isolated cases of this sort occur without any known form of contagion.

Another thing of which I should like to speak is the uncertainty of prognosis. We had in 1910 in Northampton County an epidemic which in relation to the population was almost as great as the one in New York City last year and a great many of these cases were extremely severe. One patient was entirely paralyzed in both arms and legs and was unconscious The patient was seen by me and by a representative of the State Department of Health. The child was so ill that we hardly thought he would live from one day to the next. He recovered, however, and two or three years later was brought into my office by the mother. The boy now walks as well as any of us. There is slight atrophy of some of the muscles of the calf of one leg. From my rather limited experience I do not believe it is possible to tell from the general symptoms how great the damage is in the spinal cord. Patients so severely ill as to be despaired of will make a good recovery while others with symptoms less severe will apparently have more damage done in the spinal cord but will recover with marked paralysis.

Dr. Harry Lowenburg, Philadelphia: As Dr. Leopold said in his paper, one cannot but gather certain impressions from experience with a disease of this sort. My experience covers contact with sixty or seventy cases outside of and in hospitals in Philadelphia during 1916. The impression I have received is that this disease is not contagious in the ordinary sense of the word, that transmission is not by actual contact or by a third person. I feel that the contagious element, whatever it may be, is air-borne and enters the system in several ways, probably through the nose and the gastro-intestinal tract. I have felt that probably one means of prevention would be to instruct parents to boil all food they give their children and to wash their noses gently each day with normal saline and to instil a few drops of a 20 per cent. argyrol solution. Milk should be boiled and raw vegetables and fruits should not be used in the presence of an epidemic of this disease. In this respect I agree with Dr. Mills and do not find myself in accord with the statement of Dr. Sinclair that it has been established that the disease is contagious and transmitted in a definite way.

I must also take issue with Dr. Sinclair that it is wise to throw a halo, as it were, around lumbar puncture. I think things are made too difficult for the general practitioner as it is and that he is entitled to be instructed in the technic of lumbar puncture which is a very simple procedure. In the case cited by Dr. Green certainly it was not possible to call in a specialist. Every man doing general work and coming in contact with children should be equipped to do lumbar puncture.

I do not think it wise, when we feel that lumbar puncture is indicated, to consult with ignorant and hysterical parents. We should do lumbar puncture if indicated very much as though we were taking the temperature. Personally, I ask no questions or permission, but if I think it indicated go ahead and do it. I even do lumbar puncture in my office and it takes me no longer probably than to take the temperature. This is an important matter and I believe it wrong to allow the statement to go out that the general practitioner should be made self-conscious on this point and feel himself incompetent to do that which he is perfectly competent to do. I use the sitting position and make puncture in the median line, feeling for the intraspinous ligament and straddling it, as it were, with the index finger of my left hand and push my needle through that with my right hand.

Dr. Leopold, closing: One point perhaps not sufficiently emphasized is that we believe as a result of our study of the Philadelphia epidemic that anterior poliomyelitis is a very definite clinical entity which runs true to type, the fever almost always lasting from six to seven days. The preparalytic symptoms are practically always the same and there are present symptoms of meningeal irritation which are due to a true meningitis.

Dr. Mills spoke of the question of contagion. I do not recall the number of multiple cases in the Municipal Hospital; the work will be published in greater detail. In all but one instance there was more than a single case in a family, the second case developing within two or three days of the first. This argues for a similar source of contagion rather than contagion by direct contact unless we assume that the incubation of the disease is so short a time. The opinion of Flexner and others is that the incubation period is very much longer than two or three days.

During the epidemic there were about thirty cases in the Municipal Hospital in which the diagnosis of infantile poliomyelitis was incorrect. Many of these were epidemic meningitis; many, marasmus; none of them, although all were exposed to the disease, contracted infantile paralysis. The doctors at the hospital who took care of the infantile paralysis cases cared also for the diphtheria cases. No cases in the diphtheria department developed infantile paralysis; a single case developed in the scarlet fever department. This seems to substantiate what Dr. Mills has said of his observations and those of the men working with him in Philadelphia in the recent epidemic, that if the disease is contagious it is very feebly so. I believe the general practitioner can do lumbar puncture if properly equipped and trained, and that it is fundamentally important that this operation should be done at the earliest possible moment. If we have any treatment of any value it is lumbar puncture done at the stage of meningeal irritation. If done at that stage a prompt and repeated lumbar puncture will relieve the meningitic symptoms and probably favorably influence the course of the disease. Practically nothing can be done after the disease has progressed to the stage of paralysis and flaccidity.

Dr. Sinclair, closing: I have considerable hesitancy in taking a stand opposed to one of such large experience as Dr. Mills, or Drs. Royer or Green, in this matter of contact, but I firmly believe that there is more evidence on the side of contact than on the other side of the question, that we have a very large mass of evidence and it is being very speedily shaped up in favor of contact. Probably the earliest authentic opinions on this point are those of Wickham in Sweden who brings strong evidence in support of personal contact. The work of the Rockefeller Institute, through Flexner, Draper and others, has also added very strong if not altogether conclusive evidence on this point. There is also some evidence, recently brought out, which is rather of a negative than a positive nature. I refer to the work of Amoss. This investigator has found that there are immune properties appearing in the mucous discharges, especially from the nose and throat, which seem to be nature's effort to combat the infection at these points of entrance.

The cases cited by Dr. Green, it seems to me, are not at all unlike instances which we frequently find in cases of diphtheria found in far distant points and in which we are absolutely unable to find points of contact. We all have to come in contact with other humans, and no matter how far we may live from the large centers, there is always a possibility of the unknown carrier. At all events, I do not feel that the cases spoken of by Dr. Green differ from cases of diphtheria cropping up in isolated places.

Regarding lumbar puncture, Dr. Lowenburg, I think perhaps without meaning to do so, rather enlarged the meaning of my words, because I certainly did not mean to put a halo around the head of the man who has to do lumbar puncture, nor did I mean that the operation should be relegated to a specialist on lumbar puncture. I mean that the man who has to do a lumbar puncture should take it as a serious matter and should prepare himself in the same way as a man would prepare himself to do ear or eye work. Lumbar puncture should be done not only with careful thought and preparation but under thoroughly aseptic preparation at the time of operation.

ALCOHOLISM; SOME COMPLICATIONS AND THEIR TREATMENT *

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To the seeker after medical novelties this brief paper will have but little appeal. We shall aim to set forth some observations on the determining etiologic factors of delirium tremens, with brief comment on the treatment of this complication. Chronic alcoholism must receive but passing mention.

The inebriate, like the poor, is always at our door, and he usually is of the poor, for alcoholism, poverty and disease are the triumvirate which unite to form a most troublesome sociologic, economic and medical problem. The finished product, uncouth, filthy, shifty of eye, cowardly, reeking with the odor of the gutter, the stable or some similar resting place of the night previous, and in various stages of intoxication, presents himself at the door of the hospital, and asks for treatment for ailments, sometimes real, but often strangely relieved by shelter and food.

At the outset, some fundamental facts should be emphasized. Alcohol is essentially a drug, not a food or a drink which is necessary for physiologic bodily function. Alcohol may be taken into the system over longer or shorter periods, with seemingly no deleterious effects, and a high tolerance for it can be gained. It is often this tolerance which causes an unthinking layman to believe that no harm is being done.

It is encouraging to note, in our present-day search for statutory aid in protecting the public health from the abuse of narcotics, that at last there has come federal recognition that the field is wider than opium and its derivatives, and that preservation of national health demands abstinence not only from opiates, but that kindred drug—alcohol.

To the writer, the cure of chronic alcoholism appears most difficult, if not impossible, of accomplishment. We desire to leave but one recommendation for the treatment of this class of patients, as met in city institutional work—a long-time commitment to a municipal farm for inebriates, where work may fill the want which pathologic appetite has failed to satisfy.

During 1916, 3,830 patients, suffering with acute alcoholism, were admitted to the Philadel-

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* Read at the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

phia General Hospital. Of this number, 149 were admitted in active delirium tremens, or developed this complication a few hours or days after admission. We had the privilege of studying and treating a considerable number of these patients, and during 1917 a still greater number has come under our observation.

Since there seems to be no general agreement concerning lines of treatment, and still less concerning the pathogenesis of the disease, a few observations along these lines may not be ill timed.

More than a decade ago, numerous writers referred in the literature to the probability of delirium tremens representing a form of acidosis. For years the probability of brain edema existing in delirium tremens has been admitted. Motor activity has been ascribed to the effect of toxic substances on motor brain areas, as well as to increased intracranial pressure.

In 1915, Hare, Reid, Cooper, Donklin and others filled the English medical literature with arguments to show that a high grade of tolerance for alcohol and a sudden and decisive lessening of the amount of alcohol, circulating in the blood stream, precipitated alcoholic delirium. It was contended that the sober inebriate (the man or woman who, on account of this tolerance for alcohol, rarely becomes intoxicated) when deprived of alcohol, quickly developed delirium. True it is that often the statement is made that a man drank himself into delirium tremens, but often a gastric intolerance has made imbibition of alcohol impossible for hours or days prior to the onset of delirium, even when more alcohol was procurable. That a furious drinking bout, in a periodic alcoholic, usually results in alcoholic mania, or mania a potu, and rarely delirium tremens, is the English belief, and, if followed, it is intolerance of alcohol, rather than tolerance, which brings the patient in alcoholic mania to the physician.

We have but rarely seen a patient in alcoholic delirium in whom a history of self-imposed abstinence or persistent emesis, prior to onset, was not obtained. Moreover, one usually finds the patient to be of the heavy-drinking type, showing great alcoholic tolerance, and one who, though he may become intoxicated, requires very large amounts of liquor to produce that condition.

Mercier believes that it is not the amount of alcohol which the patient drinks, but the sudden withdrawal of alcohol, which does harm; and he nominates alcohol in decreasing doses, acting as a hypnotic, as the important curative drug.

Now it appears that a rather definite period of incubation exists in delirium tremens, and likewise a similar period through which the delirium usually runs. If, then, this disease is divided into two fairly definite stages, it is our belief that the treatment should vary accordingly. It has been our experience that alcohol, in doses proportionate to the amount usually consumed, has apparently aborted an attack, when the patient was only showing the premonitory insomnia, restlessness and tremor. We have never seen alcohol show any specific properties during the second stage of active hallucinosis. Lambert, Kraeplin, Porter, Kerr and others advise against the use of alcohol alone in treatment. Ransom and Scott, in their study of a large series of cases from the records of the Massachusetts General and Cook County hospitals, attempt to show, statistically, which of the sedatives and hypnotics produce the best results. They conclude that veronal is the only drug which did not seem to increase mortality of patients in active delirium, and that the bromids were useless, or even harmful. With this latter statement we are not in agreement. We have had but a comparatively meager experience with veronal, but have found its action very uncertain. It is indeed a very doubtful matter, once delirium is actively developed, whether any sedative will produce at once the type of sleep which is recognized as the sign of beginning convalescence. Is it not more likely that in the second stage, as in some other conditions, a few days of elimination are essential for removal of the exciting factors, and that violent attempts at sedation would simulate the massive exhibition of an opiate, while the gangrenous appendix still remains? Demole states that he has found alcohol, or its derivatives, in the spinal fluid twenty-four hours after a debauch. The preventive treatment then gives best hope of good results. Exhibition of the bromids in doses of 1 dram, usually fourth hour, frequently second hour; cold packs in sthenic and warm packs in asthenic patients; hypernutrition, with careful attention to bowels and bladder, with suitable amounts of alcohol, especially when alcoholic delirium complicates some other acute condition, will frequently abort a threatened attack. We do not believe chloral and morphin are drugs necessary in the treatment of this condition, and we have seen much harm done by their routine use.

In 1916, Hogan, being convinced of the theory that the basis of alcoholic delirium was an acidemia, gave to a series of sixty patients an intravenous perfusion of an alkaline solution, containing as its ingredients sodium bromid.

sodium bicarbonate, sodium chlorid and glucose. He used the method devised by Levy and Marriott, of Baltimore, for measuring hydrogen-ion concentration of the blood. This method is carried out by means of a color indicator, which is compared with the color of a solution of known alkalinity. Hogan also used the method devised by Marriott for the determination of carbon dioxid tension in alveolar air, the lower the carbon dioxid tension, and the lower the alkalinity index, of course, proving the activity of the blood by its "buffer" action, described by Henderson, in caring for the increase of acid bodies in the bodily fluids.

Following the methods mentioned above, we have been able to prove a lowered alkalinity of the blood in nine cases. These cases were all in active delirium, and had been so for from two to four days prior to treatment. Sodium bromid, 10.2 grams, sodium chlorid, 5.8 grams, and sodium bicarbonate, 8.4 grams, in a liter of sterile water and glucose chemically pure, 80 grams, in 250 cubic centimeters sterile water, were injected into the median basilic vein, under aseptic precautions.

The results were very interesting. One out of the series became quiet during injection, and soon fell asleep (history given below). Most of the patients became quieter; pulse volume improved; sugar appeared in urine very shortly after injection, and urinary volume greatly increased. The blood pressure showed no distinctive variation. In one patient, with a systolic pressure of 185, no rise was noted. One patient suffered apparently from cardiac embarrassment, probably due to increased load, and died in four hours after injection. No definite shortening of course was noted, except in one case.

In Hogan's series, 2.63 days was the average hospital stay. In our hands, in this very small series of cases, no such results could be gained. A marked rise of temperature was noted in about half of this series.

The rationale of this alkaline perfusion is as follows:

The sodium bromid is expected to act as a sedative, and acts with the other ingredients used in rendering the blood hypertonic. The sodium bicarbonate is given to raise the alkalinity of the blood. The glucose not only acts as an easily oxidized food, because most of these patients are suffering from starvation, but also augments the dehydrating action of the whole solution. The danger of this method appears to lie in placing a greater load on a circulatory system that is so frequently impaired. Lack of time precludes the detailing of but one history as a type of the cases treated:

E. H., female, aged 36, white, was admitted Dec. 7, 1916, and discharged Dec. 16, 1916.

The patient had been on an alcoholic debauch for four months, intermittently, drinking heavily for past two weeks, and when admitted was hallucinatory and delirious, calling out names of friends whom she saw near her bed. She attempted to escape from the ward, thinking she was in prison. Physical examination revealed many coarse tremors of extremities; pupils reacted normally; no ocular palsies; reflexes increased; physical examination otherwise negative.

On admission, stomach was washed out with warm sodium bicarbonate solution, and sodium bromid and sodium bicarbonate given by mouth. Bowels freely moved. As the cardiovascular system seemed undamaged, and the patient remained delirious and hallucinatory sixteen hours after admission, intravenous medication was decided on. The patient lapsed into a profound sleep during administration; solution was stopped; patient awoke again in thirty minutes; slept well during night after treatment; urine became slightly alkaline; sugar appeared in urine with a slight trace of albumin. Convalescence was uneventful.

Dr. E. A. Leonard, my assistant in the Philadelphia Hospital, has used magnesium sulphate intraspinally, in this condition. A 25 per cent. solution of a chemically pure drug was employed. A spinal puncture was done, and dependent on pressure, from 10 to 40 cubic centimeters of fluid were removed. Of the magnesium sulphate solution, 1 cubic centimeter for every 25 pounds of body weight was introduced into the spinal canal. The patient was then returned to bed and placed in a semirecumbent position.

It is interesting to note that about 50 per cent. of these patients developed paraplegia almost immediately, with lost knee jerks, lost plantar reflexes, and paralysis of the sphincters. Complete return of normal function and reflexes usually occurred in from twenty-four to forty-eight hours. These patients usually showed improvement within a few hours. Ten out of the first twelve so treated recovered; five were very slow in recovering power in the lower limbs. It is probable that the anesthetic action of the drug employed, together with the lowering of intraspinal pressure, explain the results obtained.

PROGNOSIS

It appears that many well-known writers are somewhat too optimistic in making a prognosis in this complication. Fifty-one in the above series succumbed.

To be sure, this series represents many cases in which the delirium had existed a number of days prior to admission, and in which exposure and starvation had predetermined the result, eight patients dying from one to twenty hours after admission.

In Philadelphia, the records of the Bureau of Vital Statistics, during the past five years, attribute 510 deaths to acute alcoholic delirium.

Ransom and Scott, in 1911, made a very comprehensive and painstaking study of mortality in delirium tremens. They found that the mortality in representative American hospitals varied from 2 to 46 per cent. Obviously, these figures are misleading. Certainly there is no such variance in medical skill, nor is there such geographical difference in the resistance of patients, or in virulence of the attack. These writers conclude that a different standard of diagnosis exists, and that very early delirium, or even acute intoxication, is being included in compiling mortality statistics.

The series of cases mentioned above include only cases in which well-developed hallucinosis was present, 5 per cent. of which were moribund on admission. The mortality in 1915, was 27 per cent.

CONCLUSION

1. The cure of chronic alcoholism presents an almost hopeless task, particularly in city hospital practice.
2. Every municipality of the first class should have a city farm for inebriates, to which such patients could be committed for not less than one year; and where authority for retention of these patients could be enforced. Special provision should be made for medical care prior to above commitment.
3. In delirium tremens a well-defined period of incubation exists, and during this period well-planned treatment is most effectual. Preventive treatment shows by far the best results.
4. Once hallucinosis is developed, massive doses of sedatives do not appear to be indicated.
5. Morphin and chloral, in our opinion, are seldom, if ever, useful, and usually decidedly harmful.
6. The acidosis theory of delirium tremens seems proven. This is either due to starvation, or to a lessening of the phosphates and carbonates which are used up in neutralizing the gradually increasing acid elements in the body fluid.
7. Alkaline perfusion has not yielded very encouraging results in our hands. It is indicated only in cases in which other less heroic measures have failed. It does not shorten hospital stay. There is danger in overloading an already diseased circulatory system, as is usually met in chronic alcoholism, or any of its complications.
8. Magnesium sulphate injections offer slightly better chances for saving life and shortening the hospital stay, but the alarming action on the sensory and reflex functions of the nervous system point to the danger in its use. This method also probably has a place as an emergency measure.
9. Alcohol is indicated in treatment of the first stage, but rarely shows any results once the second stage is developed. Routine spinal drainage is advisable.
10. The prognosis in all second-stage cases of alcoholic delirium is grave, and the mortality runs from 25 to 35 per cent.

We desire to acknowledge our obligation to the members of the medical staff of the Philadelphia General Hospital for the data gained from the study of the records of patients treated by them.

Pine and Thirty-Fourth Streets.

THE TREATMENT OF PNEUMONIA IN EARLY LIFE *

HENRY T. PRICE, M.D.
PITTSBURGH

With the discovery of the specific cause of pneumonia it was thought that by applying the accepted principles of bacteriology and serology a positive cure for the disease could be produced. Until recently nothing had been found which could abort, or, to any marked degree, influence the course of pneumonia. The work begun at Rockefeller Institute and taken up in other scientific laboratories may lead to a specific, as experiments along this line seem to indicate, but until this specific is fully developed and made practical, pneumonia will have to be treated according to the reasonable principles and methods now at our disposal.

The main error that is liable to be made in carrying out these principles is that of overmedication. Like in most diseases for which there is no specific the tendency is to have a routine method of treatment. This is liable to lead to unnecessary medication rather than under treatment. Such a condition is due to two factors: the first of which is the misleading instructions of some textbooks, and second the alluring recommendations and questionable testimonials of many manufacturing chemists.

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* Read at the joint meeting of the Section on Medicine and the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 27, 1917.

Lobar pneumonia in children is usually a self-limited disease of low mortality, which runs a definite course with a strong tendency to recovery. Routine stimulation and nauseating cough mixtures can do practically no good, but are liable to upset the gastro-intestinal tract on the condition of which recovery may depend.

Do not think that no treatment is necessary or of value in pneumonia, for symptoms may be relieved and life saved by the judicious administration of drugs. Children as a rule do not take medicine willingly and the resultant struggle may produce dangerous exhaustion. In pneumonia, where the strength of the patient should be preserved to fight the infection, frequent administration of medicine of questionable value should not be carried out.

In the absence of a specific in the treatment of pneumonia the usual beneficial measures may be outlined under three heads:

1. HYGIENIC AND DIETETIC MEASURES

Fresh air is very important in the treatment of pneumonia, but that does not necessarily mean cold air. Air can be fresh and contain the maximum amount of oxygen without being excessively cold. The reaction of the child should determine, to a large extent, the temperature of the air. The clothing must be sufficient for the comfort of the patient and still not be burdensome. The proper lighting and heating of the room are essential to the comfort and aid in a favorable termination of the disease.

Proper care is of the greatest importance in the treatment of pneumonia. It should be our aim to preserve every unit of strength possible. After the disease is definitely diagnosed and the extent of the involvement noted it is unwise to make a general examination at every visit. In our anxiety to do something we are more liable to do too much than too little.

In the absence of the physician it is essential to have a trained attendant in charge who is able to interpret certain signs which are liable to appear. Parents or inexperienced help, though willing to do all they can, do not know the gravity of many signs arising during the course of this grave disease.

The dietetic care is a most essential part of the treatment of pneumonia in infancy, as most of the fatal cases are associated with grave disturbances of the gastro-intestinal tract. In febrile diseases the digestive capacity is reduced. The diet should be so arranged that it will carry the patient through the illness with the minimum amount of work for the intestinal tract. In nursing infants, if there is no digestive disturbance, the usual routine of feeding is followed. Usually the child will regulate this factor itself by reducing the length of the nursing period, or by taking food less frequently. When the child is extremely sick and is too weak or toxic to nurse, the milk should be withdrawn from the breast and fed through a Breck feeder or a dropper, if necessary. If the intestinal tract shows signs of poor digestion it may be wise to dilute the milk one third with plain water.

With the artificially fed baby the diet is a more serious question, as the digestive capacity, at best, is not up to the normal. The strength of the formula should be reduced by the addition of water or thin gruels. By carefully watching the stools and fitting the diet to the child's capacity we can often avoid grave intestinal complications.

2. TREATMENT OF THE PATHOLOGIC CONDITION

We have at our disposal two main methods of directing treatment at the pathologic process. These are counterirritation and inhalations. Counterirritation has been used almost as long as the disease has been known. It is used in many forms, as hot applications, cold applications, plasters and cupping. The mustard plaster is probably the best form and is indicated early in the disease or during the stage of congestion. It may have a beneficial effect on the future development and extent of lung involvement. In the later stage of pneumonia any possible benefit that may be derived from counterirritation is more than offset by the disturbance caused by its application.

Inhalations are valuable in many cases provided they are nonirritating and not unpleasant. Steam inhalations with creosote or benzoin seem to be most beneficial especially when there is much bronchial irritation.

In the absence of definite knowledge as to the actual benefit derived from any form of treatment directed to the pathologic process, it is a question whether all such treatment could not be abolished without influencing the outcome of the disease.

3. SYMPTOMATIC TREATMENT

Each child possesses a certain resistance to infection. In a disease as severe as pneumonia it should be our aim to preserve every unit of strength possible. Therefore, not only should the patient be put on good general treatment, but any symptoms should be recognized and treated which will reduce the vitality or in any way jeopardize the chances of recovery.

Restlessness is one of the first and sometimes the only symptom we are called on to give special treatment. Rest, being one of nature's chief methods of preserving strength, should be secured as early and as much as possible. In many cases all that is necessary is fresh air or the tepid bath, but if the patient does not respond satisfactorily, opium in some form should be used.

The chief indication in the average case of pneumonia is to minimize toxemia and prevent serious enfeeblement of heart action. Elimination is the best method now at our command to combat this condition. An initial dose of castor oil or milk of magnesia should be given to clean the intestinal tract of toxic materials. Elimination through the kidneys and skin should be promoted by the use of large amounts of water and frequent sponging. If the stomach is not retentive enteroclysis or even hypodermoclysis should be used. When vomiting is a serious symptom of the disease acidosis may be present, in which case the bicarbonate of sodium should be added to the solutions administered.

Heart stimulants are necessary in many cases at the height of the disease, but just because a child has pneumonia it is not necessarily an indication for heart stimulants and the routine use of such should not be practiced. There are quite definite indications for the use of such stimulants. If the pulse is rapid but regular strophanthus in one of its forms is of greatest value. For the soft irregular pulse, caffein seems most effective. The routine use of alcoholic stimulation in pneumonia is contraindicated.

To combat respiratory failure there is nothing better than atropin, provided it is given until physiological effect is obtained. It will often excite the respiratory centers to greater activity and tide the patient through a critical period.

The use of oxygen inhalations, in some cases, is very beneficial and in conjunction with atropin may turn the balance to the right side. If the patient is given plenty of well-oxygenated air from the start the use of respiratory stimulants and oxygen inhalations will much less frequently be necessary.

No treatment of pneumonia in infancy is complete without the use of the hot mustard bath. It should not be used routinely, but when the child is cyanotic and greatly depressed it may be the only means that will give the desired result. It is also of prognostic value at this time, for if there is no response to the mustard bath there is usually nothing else that will be effective.

Westinghouse Building.

DISCUSSION

Dr. H. Brooker Mills, Philadelphia: I have enjoyed this paper, and am particularly pleased at the warnings against overexamining and overtreating. The latter is undoubtedly practiced very extensively, particularly in children, and especially along the line of stimulation and nauseating cough mixtures.

I wish to emphasize Dr. Price's reference to fresh air in the treatment of pneumonia; as he says, it should be oxygen-laden air, not extremely cold air. I am sure much harm has been done by exposing a child with pneumonia to extremely cold air, sometimes even to such an extent that it has been unbearable for the attendant.

In no disease is it more important to have what the doctor refers to as a "trained attendant" in charge than in pneumonia; nor is there any disease of childhood in which it is more necessary to keep the overanxious mother from handling the child.

As to the dietetic care referred to in the paper, which I agree is all important, my rule is in all cases of irritable stomach, poor appetite and impaired digestion, to feed the child by enteroclysis, using 4 ounces of a 5 per cent. solution of glucose by Murphy drip, 20 drops to the minute, every four hours. In cases of breast-fed babies suffering with pneumonia, in addition to the author's suggestion to withdraw the milk from the mother's breast and feed to the baby through a Breck feeder or with a dropper, if necessary, I would add that at times, especially during very high temperature, when food will not be borne well, it is my rule to peptonize it before giving it to the baby. Even in older children it has been my experience that peptonized milk will frequently be borne better than whole milk diluted. Where prolonged stimulation is necessary, or where the child, for any reason, is getting insufficient nourishment by mouth, I have gotten very good results from the use of strong, hot coffee, 4 ounces by Murphy drip, 20 drops to the minute, every four hours. To this I sometimes add a drachm of whisky.

With the recommendation of the use of counterirritation and inhalations, rather than medicine by mouth, I heartily agree, and my own preference for the former is dry cupping and hot mustard applications. The latter is made by adding a teaspoonful of mustard to a pint of hot water in which a piece of flannel of four thicknesses is wrung out and applied to the chest for 20 minutes, every two, three or four hours as needed. For the inhalations, in addition to creosote and benzoin mentioned in the paper, I would add camphorated tincture of opium and oil of eucalyptus.

I cannot agree with the author's recommendation of the use of opium for restlessness in the treatment of pneumonia in children, as I have yet to see any necessity for its use. My method of treatment for restlessness is the same as that for high temperature, i. e., ice bag to the head, hot water bottle to the feet, tepid sponges and high colonic irrigations. On the last named I rely particularly in cases of extreme restlessness and they have never failed to give results. At the same time I am accomplishing two other objects referred to by the author, i. e., minimizing toxemia and securing elimination through the kidneys and bowels. Neither can I agree with the recommendation of an initial dose of castor oil, except the child is suffering from diarrhea, as I feel the constipation following the use of castor oil, after its first action has been secured, would in itself be a complication. The milk of magnesia also recommended I would consider much better, but my own preference is for a course of calomel in powder form given dry on the tongue, followed by the milk of magnesia or a saturated solution of magnesium sulphate in orange juice.

As to stimulation, pediatrists and clinicians in general differ very much on this point. I am very glad the author advises against its routine employment, particularly in alcoholic form. Digitalis and the ammonia preparations especially should be avoided because of their tendency to cause digestive disturbances. My preference for stimulation is for nitroglycerin in cases of cyanosis with a mottled appearance of the face; strophanthus in cases of rapid but regular pulse, and strychnin in cases of broken compensation, all given hypodermatically when a trained attendant is in charge. I am also very fond of caffein sodium benzoate by hypodermic in certain cases. I heartily approve of the recommendation of atropin for respiratory failure, which I also prefer to give hypodermatically, and when necessary oxygen inhalations. I also strongly indorse the author's statement that such remedies will rarely if ever be needed if the proper amount of oxygen-laden air, not too cold, is afforded the patient throughout the entire illness. I have had no experience in the use of the hot mustard bath for cyanosis and depression, but can readily understand why it would probably be of decided benefit in some cases.

Balneotherapy and hydrotherapy, water within and water without, are my sheet anchors in the treatment of this disease in children, and it is my opinion, based on experience, that this form of treatment intelligently and persistently administered from the beginning will obviate the necessity of using nauseating cough mixtures, antipyretics and stimulants, thus saving the gastro-intestinal tract, on the condition of which, as the author states, recovery may depend, as well as minimize the frequency and severity of the complications so often encountered in this disease.

Dr. Myer Solis-Cohen, Philadelphia: It is odd that no attention seems to be paid to the clinical experience of years and to the observations of different investigators. While it is true that there is no specific in the treatment of pneumonia, yet the work of many men for years showing the effect of quinin in the treatment of pneumonia seems to be ignored. In experiments in vitro quinin destroys the pneumococcus. Experiments more recently made also show that in mice quinin raises the bacteriocidal power of the blood. Probably now that the Rockefeller Institute is emphasizing the use of quinin in pneumonia more attention will be paid to it. It is not fair to our patients not to make use of methods and drugs which experience and experiments have shown to be useful, and not creditable to ourselves to condemn the use of a drug which we have not used and the value of which we possibly knew nothing. The work of Dr. S. Solis-Cohen regarding the use of quinin and urea in pneumonia in adults is probably known to those present. For years I have been giving quinin and urea to children with pneumonia. It is surprising to see what large doses a child will take without showing cinchonism. This winter I gave to a child of 10 years, 7½ grains of quinin every three hours for several days without producing tinnitus. To infants of 2 years I have given a dose as high as 5 grains. That is about the dosage we would give every three hours until the temperature drops to 101 F. I used to give it intramuscularly, but unless the technic is perfect, preventing the retention of any of the quinin in the muscle, abscess is liable to ensue. For the last few years therefore I have been giving it by mouth, by capsule if possible; if not, in cocoa. My results have been remarkably good. The quinin seems to act against the toxemia as well as against the pneumonic process itself.

Dr. Harry Lowenburg, Philadelphia: I should like to add my testimony that morphin is sometimes life-saving in children, when administered under suitable conditions and in the absence of contraindications. I would give it in the presence of extreme restlessness, irritability and sleeplessness. Contraindications are gastro-intestinal conditions, abdominal distention, etc. I would give it in hypodermic injections of from $\frac{1}{80}$ to $\frac{1}{40}$ of a grain. I have never felt that strychnin, digitalis, etc., could be credited with the same life-saving value. In pneumonia I feel that, aside from maintaining as it were "a masterly inactivity" with reference to all medication, the secret of success is to preserve every ounce of strength the patient may have that he may battle with this self-limited disease. This we are assisting him to do by the suitable use of morphin such as I have indicated.

Dr. Henry Finkelpearl, Pittsburgh: I should like to ask how in the winter time fresh air can be administered without having with it some cold air. I think that the dangers of impure air are much greater than the danger of a little cold air. It is known to most of us that a little whiff of cold air over the face acts as a respiratory stimulant in all cases of pulmonary disease. This is true in tuberculosis and I believe it it also true of pneumonia.

In regard to morphin, I would say that I am afraid of it. I have had some cases in my early practice in which I used it and have regretted it ever since. In the case of a child of 4 with a temperature of 106 F., pulse 180, with restlessness and delirium, the question arose of the use of morphin or a cold pack. We decided on the latter; the child went to sleep and was much improved in the morning.

Regarding counterirritation, while this is important we do not want to disturb a child having pneumonia more than it is necessary. In the last few years I have been following the method of sponging with water at 85 to 90 F., every three, four or six hours according to the height of the temperature. In addition to that I have used the cold compress to the chest, as suggested by Dr. S. Baruch, which takes the place of the counterirritants and is more agreeable and can be continued much longer. I would emphasize the importance of dilatation of the external circulatory vessels. This is accomplished by the application of cold compresses of from four to six thicknesses of an ordinary towel, with water of the temperature of 60 or 65 applied from the neck to below the ribs, covered with oil silk a little larger than the compress. These are changed every two hours and the child is sponged every four hours, every other compress being changed immediately after sponging entire body.

Dr. Scott, closing: It was not the intention of the author to give in detail the various methods employed in the treatment of pneumonia in young children, but rather briefly to discuss a few of the more important points and emphasize the simplicity of such treatment. In the average case all that is necessary is to have fresh air, good hygienic surroundings, plenty of water, properly regulated diet, close observation and judicious administration of those drugs which are definitely indicated. The temperature of the air to be used is a very much discussed question. As I have observed, excessively cold air is not well borne by young children. In extremely cold weather the best method of securing fresh, moderately warm air is to put up the windows and turn on the heat. This should be so regulated that the temperature of the room will be kept between 65 and 70 F. The frequency of sponging should be governed by the condition of the patient. If the patient is eliminating well through the bowels and kidneys and is not toxic, sponging should be eliminated. If indicated, sponging should be done not oftener than every four hours.

ORAL SEPSIS *

S. B. LUCKIE, D.D.S.
CHESTER

The greatest problem of mutual interest to the medical and dental profession today is oral sepsis and its various sequences. Our knowledge concerning the etiological relationship of oral sepsis to the joints, heart, stomach, kidneys and nervous system is due to the splendid research work performed by the members of both professions.

The mouth, because of physical characteristics and the possibility of its becoming a veritable hotbed of bacteria, is a favorable part of man's physical arrangement in which disturbances in other parts have their origin. It now holds first rank as a focus of infection. What percentage of organic and nervous diseases is due to oral sepsis has not to my knowledge been definitely determined, opinions varying anywhere from 25 per cent. to the assumption that the chief cause is to be found in diseases of the teeth and their investing structure. We appear to be passing through an etiological era wherein the apical area of the tooth roots is being x-rayed and shown to be in a menacing condition.

Dentists are impressed with a greater responsibility than ever in the treatment of pulpless teeth. The laity are alarmed and asking for a clean bill of oral health or acclaiming that a new medical and surgical fad has taken hold of the profession. From whatever angle one views the relation of oral sepsis to arthritis, endocarditis, neuritis, nephritis, gastric and duodenal ulcers, gallbladder infection, etc., we should not lose sight of former eras of as intense interest and profit regarding metabolism and body defenses; or, if not accepting roentgenology as the last witness in diagnosis or bacteriology as the last word in disease causation, we should, with the evidence thus far produced, put ourselves in sympathy with those who believe oral sepsis to be a threatening evil.

INVASION OF ORAL SEPSIS

Oral sepsis may invade the blood and lymph streams from two sources, disease of the dental pulp and disease of the gingivæ, both of which can involve the peridental membrane and the osseous structure surrounding the root of the tooth. Streptococcal infection of the dental pulp first involves the pericemental membrane at the apex of the root of the tooth. Infection of the gingiva first involves the peridental membrane at the gingival line of the tooth. The enamel of the teeth and the gingivæ are the principal protective tissues of the mouth to defend the general system from infection and require frequent prophylaxis from the family dentist, for when caries attacks the enamel of a tooth or if gingivitis be present infection has commenced a journey which may be an extended one.

BACTERIA OF THE MOUTH

At birth the human mouth has been found, in all cases examined, to be sterile. Within ten or twelve hours bacteria flora is observed; the organisms found are staphylococci and streptococci. The staphylococci are claimed to be accidental; the streptococci appear to be true parasitic organisms of the mouth capable of obtaining an existence on the healthy mucous membrane. After the eruption of the teeth the condition of the mouth is such that they may take on pathogenic activity, their pathogenicity being due to an oral condition that favors uncleanliness, to dietetic habits and to a lowered resistance. Investigators at different times have claimed to have found micro-organisms that had specific relationship to dental diseases. Subsequent investigations have disproved such findings. For the present we are confronted with the fact that in the consideration of oral sepsis we have to deal with a mixed infection and especially with those organisms that are

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* Read before the Delaware County Medical Society, June 21, 1917.

constantly present. The streptococci being constantly present, the conditions which modify or attenuate their virulency appear to be the study at the present time.

Other organisms, whose presence is claimed to be accidental, are found at different periods. Pneumococci are frequently found in the mouths of infants in hospitals, though usually absent in the mouths of children in the home. During an epidemic of diphtheria among schoolchildren the Klebs-Loeffler bacillus is often found in the mouths of those not affected with the disease.

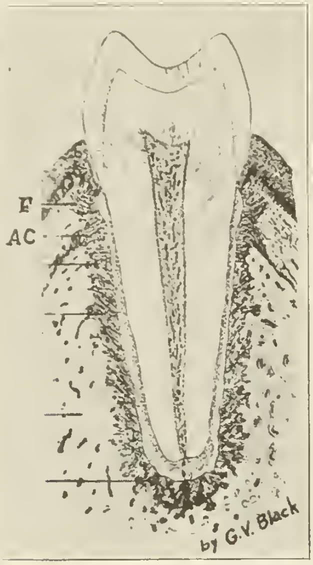

Fig. 1.—Section through a bicuspid tooth and investing structure. F. Free gingivae group of fibers passing into the free gingivae. AC. Alveolar crest group of fibers passing into the body of the gingivae. This histologic specimen clearly shows that infection in the space between the gingivae and the teeth may extend to and destroy the rest of the investing structure.

There seems as yet no universal method of classifying mouth streptococci. We have the *Streptococcus salivarius*, the *Streptococcus longus*, the *Streptococcus brevis*, and the *Streptococcus viridans* with the debatable question of the mouth streptococci being a distinct species or a variation of the ordinary *Streptococcus pyogenes*. Dr. Thomas B. Hartzell of the Laboratories of the Research Institute of the National Dental Association at the University of Minnesota says, "The *Streptococcus brevis* of Van Lingelsheim, the *Streptococcus salivarius* of Andrewes and Horden and the *Streptococcus viridans* of Schottmuller are one and the same, and are identical with the *Diplococcus rheumaticus* of Poynton and Paine." The same investigator states as his belief that "the balance of evidence at present is in favor of the view that there are a number of species of streptococci distinct and not transmutable, of which the *Streptococcus salivarius* is one, but that the division into hemolytic and nonhemolytic strain is inviolable." Dr. Edward C. Rosenow of the Mayo Foundation is a radical opponent of this theory. Rosenow asserts that the *Streptococcus viridans* can change into the *Streptococcus pyogenes* on the one hand and the pneumococcus on the other. These opposing theories make the pathogenicity of the mouth streptococci a very broad topic.

Streptococci are found in the healthy and the unhealthy youth, in the clean and the unclean mouth. They are present in dental caries, both superficial and deep, in pulpitis, in gingivitis, in pyorrhea alveolaris and in alveolar dental abscess. They are the microbic causes of these diseases, at which times they are of proven pathogenicity, have the ability to invade the blood and lymph streams and to produce metastatic infection by inoculation. They reside constantly in deep layers of dental lesions. In metastatic infection and in inoculated animals they produce subacute and granulomatous lesions similar to the inflammatory conditions found in pyorrhea alveolaris and in chronic alveolar abscess.

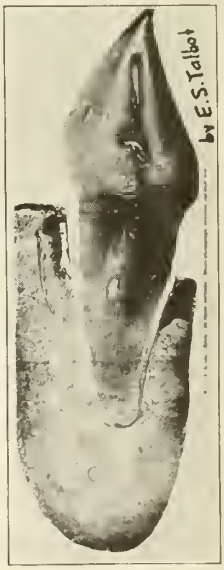

Fig. 2.—Showing the ravages of pyorrhea alveolaris.

The pus-producing cocci are not permanent inhabitants of the mouth; their presence is considered accidental. Goady found the *Staphylococcus aureus* eighty times from one thousand mouths, but found the *Staphylococcus pyogenes albus*, which possesses low virulency, frequently in suppurating conditions of the mouth. They at times appear to follow in the wake of the mouth streptococci and produce suppuration. Gingivitis and chronic alveolar abscess are not originally purulent. The investing structure of tooth roots may have all the characteristics of pyorrhea alveolaris, minus pus. The chronic abscess, the nonpurulent pathological condition at the apex of a tooth root, the so-called blind abscess, which Rosenow blames for many cases of endocarditis, may become purulent by the staphylococci gaining entrance to that region.

Literature of the mouth bacteria indicates that the staphylococci of the mouth are generally nonpathogenic for they show low power of invasion into the general system, but there are no data of metastatic infection secondary to oral lesions. When they do invade the general system and produce pathological conditions it is general septicemia, their hemolytic and leukocidic properties not having the affinity for the tissues of any particular organ as have the streptococci.

PREDISPOSING CAUSES OF DENTAL DISEASES

Transmissibility of disease can generally be determined by inoculating animals with those germs encountered in a given disease. This is not true with the streptococci found in dental caries and pyorrhea alveolaris. Dental caries can be produced on artificial media, but caries and pyorrhea alveolaris have not been produced by inoculation or any known method of disease transmission.

Other factors than bacteria enter into their etiology; unbalanced metabolism, impaired function of the ductless glands and dietetics each has received attention in discussion of predisposing causes. In comparing the dietaries of people living under the influence of civilization for long years with the dietaries of races partly civilized or enjoying civilization for a comparatively short time and in whom the average incidence of dental caries and gingivitis is very low, the balance of evidence seems to be in favor of a food requiring effort to masticate and possessing sapidity.

Professor Pickerill of the University of Otago, N. Z., in a classic work on the "Prevention of Dental Caries and Oral Sepsis" presents the Maori race as illustrating the beneficent effect of such a diet on the oral region. Their diet is a mixed one, largely protein, combined with sapid fruits and vegetables. Their drink is a water often flavored with the juices of the tutu berry. Masticatories are largely indulged in between meals, the gum of the kauro and tarata tree being chewed, and on social occasions the chewed morsel is freely passed unceremoniously from mouth to mouth; this etiquette, however, is not presented as a prophylaxis. The average incident of dental caries in this race is 5.2 per cent. as compared with 96 per cent. among schoolchildren in American and European countries. Pickerill recommends in accord with the dietary habits of savages who enjoy relative immunity from dental caries that meals should be terminated with fruits or vegetables having an acid reaction. Prof. William J. Geis of Columbia University some years ago took up the study of the etiology of caries along lines similar to those of Pickerill. His conclusions are in accord with the postulate that a protein diet unaccompanied by fruit acid conduces to tooth decay and states that "the propaganda in favor of alkaline and antiseptic dentifrices and mouth washes is maintained by those who sell the goods, physiologists not being responsible for it." Clinical experience in oral prophylaxis convinces me that Pickerill and Geis are right.

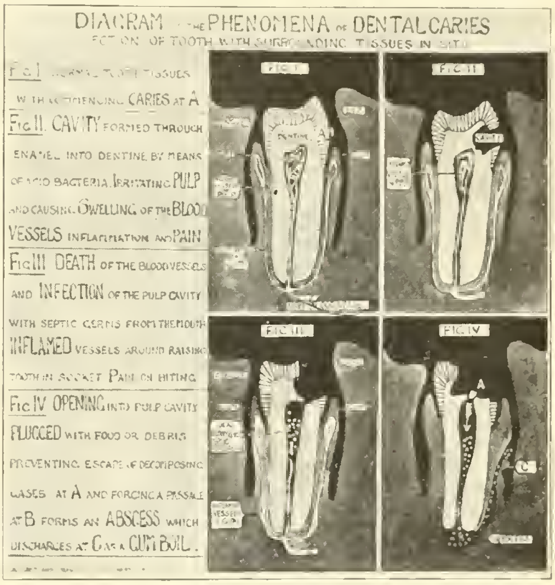
DIAGRAM OF THE PHENOMENA OF DENTAL CARIES
Fig I
WITH COMMENCING CARIES AT A
Fig II. CAVITY FORMED THROUGH ENAMEL INTO DENTINE BY MEANS OF ACID BACTERIA IRRITATING PULP AND CAUSING SWELLING OF THE BLOOD VESSELS INFLAMMATION AND PAIN
Fig III DEATH OF THE BLOOD VESSELS AND INFECTION OF THE PULP CAVITY WITH SEPTIC GERMS FROM THE MOUTH INFLAMED VESSELS AROUND RAISING TOOTH IN SOCKET PAIN ON BITING
Fig IV OPENING INTO PULP CAVITY PLUGGED WITH FOOD OR DEBRIS PREVENTING ESCAPE OF DECOMPOSING GASES AT A AND FORCING A PASSAGE AT B FORMS AN ABSCESS WHICH DISCHARGES AT C AS A GUM BOIL.
FIG I
FIG II
FIG III
FIG IV
DENTINE
A
A
C

Fig. 3.—Showing dental caries, the infection passing through the tubuli, the pulp, the apex of root and discharging on the gum. After the abscess has run its course a nonpurulent abscess forms at the apex of the root, as shown in Figure 4.

COOPERATION

Disease is a blight, prophylaxis is a moral duty. A standard of health represents physical efficiency, be it individual or nation. Moral conception of right influences the application of efficiency. Might may triumph over right by unmoral methods applied to efficiency. Several years ago Germany established dental clinics and the teaching of oral hygiene in her schools. During the Boer war thousands of Britains were incapacitated for military service because of dental disabilities. Today the United States of America has entered the world war for the overthrow of militarism and its accompanying atrocities. Young men who should be capable of becoming from 90 to 95 per cent. efficient are offering their services; some of them, I know not what per cent., are being refused because caries has ravaged their teeth.

Dental caries and gingivitis are serious diseases; serious because destroyers of important organs of digestion, serious because factors in hereditary influence in determining facial features and serious as advance agents of infection of vital organs and parts of locomotion and dexterity. An army of 20,000,000 children march to school daily, 96 per cent. of whom have defective teeth. In New York the estimate is that it costs the metropolis over $1,000,000 annually to educate the children who are unable to attend school regularly on account of dental diseases, thereby causing them to spend an extra term. What avails an educational system if children suffer from septic absorption? Our nation is interfered with in her preparation to grapple with the beast of militarism. Strong men are needed for soldiers, and strong men and women are necessary at home for the production of what is needed for the support of a nation in time of war. And when the beast is destroyed, which it will be, the period of adjustment will require strong minds in strong bodies.

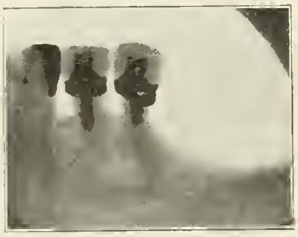

Fig. 4.—Chronic apical abscess, nonpurulent, the streptococci viridans being the infecting organisms.

Ignorance is largely responsible for the widespread prevalence of a disease that affects 96 per cent. of the potential men and women of our country; ignorance of the causes, of a remedy and of the seriousness of the condition and its consequences. In this crucial period of our nation, health is one of the greatest assets and there are three classes on whom devolve an obligation: boards of education, medical men and dentists. The people must be educated to know that the teeth are not isolated parts of the body, but are intimately associated with the other parts by a vascular and nervous system and important organs of the alimentary system, from both a physiological and a pathological point of view.

The general practitioner of medicine sees and knows the child months, perhaps years, before the dentist. He can impart the information that food having the elements in it to build bone and teeth should not represent the minus quantity in the daily ration and that food of the character favoring bacteria colonization should be balanced by those that give the mouth a natural cleansing, excite the salivary glands and give an alkaline and diastatic saliva.

From a dental standpoint alone the return to the breast feeding of infants would be an immense advantage. Investigation along the line of study to find the causes leading to the low production of mother's milk and the remedies to increase it to the desired amount would be well worth undertaking. Aside from the natural foods being the best, the exercise to obtain it would result in fewer contracted maxillary arches and deficient air spaces. Contracted maxillary arches mean malposed teeth and malposed teeth mean an imperfect masticatory apparatus and a condition favoring an unclean and unsanitary mouth.

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AN ANALYSIS OF 998 CONSECUTIVE COMPLETE BLOOD COUNTS *

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The purpose of blood examinations is to assist in the diagnosis, prognosis and treatment of patients. Until more is known about the origin, function and response to diseased conditions of the various blood cells, the value of blood examinations must be restricted. It is the purpose of the analysis of this series to indicate

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* Read before the Pittsburgh Academy of Medicine, March, 1917.

our present limitations and to make some possible suggestions for the further grouping of diseases according to the blood picture shown.

The series of 998 complete counts here analyzed were all made by the writer on the private patients of Dr. James D. Heard and myself. They represent consecutive counts made with the same set of mixing pipettes and Sahli hemoglobinometers, all of which were checked with a standard. The Thoma-Zeiss hemocytometer was used. All smears were made on thin square coverslips and stained with Hastings' polychrome stain. Most of the specimens of blood were taken in the afternoon between the hours of 3 and 6 and were studied as soon after taking as was practical. The specimens were taken after patients had been sitting a half hour or longer in the warm office, so practically all counts bear the same relation to meals, exercise and cold, thus reducing physiologic variations to the minimum.

The hemoglobin estimation, the number of red blood cells per cubic millimeter, the color index and the morphology of the red blood cells were of value only in indicating the presence or absence of an anemia. If an anemia was present they showed the amount of degeneration and destruction of the cells, and in suceeding counts in the same patient they gave knowledge as to the progress or arrest of the anemia as the case continued. This information can be accurately obtained in no other way, for often the color of the mucous membranes and the tonicity of the body tissues are not an accurate index to the repair or progress of an anemia, be it primary or secondary. And it should be emphasized that a study of the morphology of the red blood cells generally yields more information as to their destruction and regeneration than the mere counting of them.

Whether there was demonstrable pathology present in the patient or not, the enumeration of the white blood cells was helpful to confirm or point the way to the diagnosis of an existing condition, or to suggest its absence in suspected cases. But far more was learned from a study of the various kinds of white blood cells. In the following differential counts all the granular cells will be considered in sequence and all of the nongranular. This simple classification is used in order that all cells believed to have a common origin may be grouped together. It is generally accepted that all granular cells have their origin from the bone marrow, while most nongranular leukocytes are believed to arise from lymph tissue.

POLYMORPHONUCLEAR NEUTROPHILS

The polymorphonuclear leukocytes were increased over the accepted normal percentage of 70 in 179 smears. This increase was found in patients suffering from infections, acute or pyogenic. They were diminished under 65 per cent. in twenty smears without an abnormal increase in any other group of cells with which they might be classed. This diminution occurred in asthenic conditions, or in those patients who are regarded to have an abnormally low resistance.

POLYMORPHONUCLEAR EOSINOPHILS

Of the 998 differentials made, there were eighty-eight which had an absolute eosinophilia or over 250 eosinophils per cubic millimeter. These are grouped according to disease in the following table:

Pernicious anemia	14
Intestinal putrefaction	12
Hyperthyroidism	9
Intestinal parasites	7
Secondary anemia	6
Chronic skin lesions	5
Asthma, bronchial	3
Tubercular injections (therapeutic)	3
Arteriosclerosis	3
Malignant tumor	2
Morphinism	2
Pyorrhea alveolaris	1
Diabetes mellitus	1
Arthritis, chronic	1
Gonorrhea	1
Undiagnosed	18

According to the literature, eosinophilia may be found in childhood, bronchial asthma, skin lesions, intestinal parasites, trichinosis, splenomyelogenous leukemia, chronic enlargement of the spleen, pernicious anemia, malignant tumors, after the ingestion of certain drugs, following tuberculin injections, in the postfebrile stage of acute infections, gonorrhea, hydatids and rachitis.

From a study of the above series it will be noticed that only thirty-seven fall within the list of possible associated conditions. That is, in 51, or in 57.9 per cent. of the cases, eosinophilia did not assist in the diagnosis in the light of our present knowledge. It is interesting to note that there was an eosinophilia in twelve cases of intestinal putrefaction, indicating a correlation of the chemotactic action of intestinal parasites and of intestinal putrefaction. The two cases of morphinism showing an eosinophilia are interesting, as a search of the literature failed to show morphin either in toxic dosage or in continued dosage as a cause of eosinophilia. The nine cases of hyperthyroidism in this group also merit consideration.

A survey of the above series shows that these patients taken collectively were suffering from poisons either exogenous or endogenous, and that these poisons are correlated so far as a chemotactic action for the eosinophil is concerned.

POLYMORPHONUCLEAR BASOPHILS

Basophils being present in excess of 1 per cent. were regarded as abnormal. There were twenty-six such cases grouped as follows:

Secondary anemia	5
Neurasthenia (so called)	3
Hysteria	2
Syphilis	2
Hyperthyroidism	1
Coryza	1
Hodgkin's disease	1
Gastric neurosis	1
Raynaud's disease	1
Asthma, bronchial	1
Diabetes mellitus	1
Intestinal putrefaction	1
Tubercular injections (therapeutic)	1
Undiagnosed	5

As the conditions in which an increase in the basophils may be found are usually given as myelogenous leukemia, nonfebrile articular rheumatism, the cachexias of malignancy, chronic skin lesions, septic bone lesions and chlorosis, it will be seen from the above series that the presence of basophilia was not of much help in diagnosis. In general, it may be said that it was present in asthenic conditions.

MYELOCYTES

There were fifteen slides showing the presence of myelocytes. Twelve were from patients suffering from pernicious anemia, one from a patient suffering from angina pectoris, and two were from patients whose condition was not diagnosed.

LYMPHOCYTES

Differentials showing lymphocytes in excess of 30 per cent. were regarded as showing a lymphocytosis. Of these there were 258 as per the following table:

Asthenic state	88
Children (healthy)	34
Intestinal disturbances	26
Pernicious anemia	17
Tuberculosis	17
Hyperthyroidism	14
Malignancy	4
Syphilis	3
Diabetes	1
Tonsillitis	1
Dyspituitarism	1
Undiagnosed	52

The various authorities state that the lymphocytes may be increased above normal physiologically in children, after heavy meals, vigorous exercise, in debility, hyperthyroidism, tuberculosis, syphilis, malignancy, chlorosis, pernicious anemia, hepatic cirrhosis, scurvy, hemophilia, rachitis, intestinal disturbances and pertussis.

A survey of the above series shows that practically all of them fall within the prescribed list except those which could not be classified.

LARGE MONONUCLEARS

There were 166 smears in which the large mononuclears were 5 per cent. or over, distributed as follows:

Neurasthenia (so called)	30
Pulmonary tuberculosis	14
Intestinal putrefaction	10
Hyperthyroidism	10
Children	10
Syphilis	9
Cachexias of malignancy and exhausting diseases.	9
Skin lesions	3
Arteriosclerosis	2
Diabetes mellitus	2
Malignant endocarditis	2
Bronchitis, chronic	2
Raynaud's disease	1
Epididymitis	1
Influenza	1
Measles	1
Hodgkin's disease	1
Appendicitis, chronic	1
Undiagnosed	25

The origin of the large mononuclear is not universally agreed on, therefore the significance of its appearance in the blood stream can not be fully appreciated. Simon[1] claims that it is a plasma cell formed from lymph cells and is due to chronic irritation. If so, its presence in larger numbers should accompany those conditions where the lymphatic system is involved. A review of the literature does not substantiate this and, from a study of the above series, it will be noted that there are few cases wherein a chronic irritation of the lymphatic system could be reasonably supposed to exist.

Naegele[2] claims that its origin is from the bone marrow, that it is the primary cell of the bone marrow or myeloblast, and appears in the blood under the same conditions as the myelocyte. Myelocytes may be called into the blood stream by any condition taxing the blood making of the bone marrow, such as splenomyelogenous leukemia, acute lymphatic leukemia, tumors of bone marrow, pernicious anemia, severe secondary anemias, severe infections such as diphtheria, pneumonia and septicemias.

In the above series the cases of syphilis, the

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1. Simon: Clinical Diagnosis, Lea and Febiger, Eighth edition.
2. Naegele: Deutsche med. Wchnschr., 1900, p. 287.

various cachexias, malignant endocarditis, influenza, measles and Hodgkin's disease or twenty-three cases in all out of the 166 may be regarded in the above group, leaving 143 cases or 86.2 per cent. of the cases ungrouped. In other words, in 86.2 per cent. of the cases the presence of large mononuclears in excess of normal can not be explained in the light of our present knowledge.

It seems, however, salient that they should be increased in neurasthenia, pulmonary tuberculosis, intestinal putrefaction and hyperthyroidism, which classed together may be regarded an asthenic group and which total in this series sixty-four cases, or 38.5 per cent. Whereas this does not throw light on the possible origin of the large mononuclears, it does help clinically the grouping of many of the obscure cases.

On the other hand, accepting the chemotactic theory for the presence of the various cells in the blood stream the whole group of asthenic cases, neurasthenia in particular, may be suffering from an unknown poison responsible for their condition which has called forth the large mononuclear. And here may be the suggestion of a means to a better understanding of that large group of cases known as neurasthenics.

SO-CALLED TRANSITIONALS

There were twenty-nine smears which showed so-called transitionals in excess of 5 per cent. distributed as follows:

Intestinal putrefaction	5
Secondary anemia	4
Neurasthenia	3
Tenia	2
Skin lesions	2
Diabetes mellitus	2
Exhaustion	2
Child (healthy)	1
Pernicious anemia	1
Raynaud's disease	1
Tuberculosis	1
Sarcoma	1
Obesity	1
Osteitis fibrosa	1
Undiagnosed	2

The term transitional, as Warfield[3] points out, is a misnomer, for this cell is not a transition between the myleocyte and the polymorphonclear as was originally thought. It is now believed to arise from the endothelial lining of the lymph vessels and blood capillaries in response to irritating or infective agents.

It has been claimed that the transitionals are distinctive cells in Hodgkin's disease (Bunting[4]). In this series there were two patients with Hodgkin's disease in whom at no time over a period of two years' observation in each instance were the transitionals in excess of normal.

Relative to the claim made by some[5] that the transitional is an old large mononuclear, it is interesting to note that in the present series of 166 cases where the large mononuclears were in excess of normal there were only thirteen cases where the transitionals were in excess of normal. This is rather strong evidence of the independence of these two cells.

It should be stated that in nearly every smear examined there were one or more cells encountered which could not be classified. It is not within the province of this paper to discuss all the various types and possibilities of these cells. It is possible, however, that with a uniform technic herein below indicated these unclassified cells may become classified and their meaning interpreted.

There were 272 normal counts, and these coincided with the clinical picture in each instance, except in a few cases of pernicious anemia and influenza where the differential might have been expected to be different. Adding to the 272 normal counts which were of no definite help in diagnosis, the undiagnosed cases in each group or 104, there were 376 counts out of the 998 made which had no direct bearing on the diagnosis, prognosis and treatment of the patient. Deducting from each group the number which had no classification in that group according to the light of our present knowledge, or 210, and adding these to the 376, there were 586 counts made which offered no direct assistance in the diagnosis, prognosis and treatment of patients.

Of the remaining 412 counts the way to a diagnosis was pointed out in six of the seven cases of intestinal parasites and in seventeen cases of pernicious anemia, or twenty-three in all. In the remaining 389 cases the blood count was helpful in diagnosis.

Because of the help to be received in such a large number of cases the conclusion is drawn that a complete blood examination should be made on every new patient seen and on the same patient as often thereafter as indications warrant; that on it the correct diagnosis can sometimes be made, but as a rule, like all other laboratory procedures, it is only an aid in the diagnosis, prognosis and treatment of disease, and should always be used to supplement a carefully interpreted complete history and physical examination which still remains the most valuable single procedure in the diagnosis and treatment of patients.

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[3] Warfield: Jour. Am. Med. Assn., April 17, 1915, p. 1297.

[4] Bunting, C. H.: Blood Pictures in Hodgkin's Disease, Johns Hopkins Bull., 1911, xxii, p. 369.

[5] Mallory, F. B.: Pathologic Histology, 2d edition, p. 23.

As Warfield[3] has pointed out, a simple classification based on our present knowledge of the origin and function of the white blood cell should be followed to be changed as further investigation warrants. In this way uniform statistics become available to help make differential counts of more value in the diagnosis and treatment of patients. It is further urged that hemoglobin readings be made on the basis of the number of grams per 100 cubic centimeters of blood. At present hemoglobin readings are made with various instruments all standardized differently on their own percentage basis, so that comparative readings, unless made by the same man with the same instrument, are valueless.

There is no more reason why hemoglobin readings should be expressed in percentage of the normal and this normal be variously fixed by the different manufacturers of instruments, than that red blood cells and white cells should be expressed in percentage of the normal instead of actual number per cubic centimeter. In each instance due allowances can be made for the normal physiologic variations of age and sex. If hemoglobin readings were expressed in grams per 100 cubic centimeter then the color index could be expressed by the number of grams per 1,000,000 red blood cells.

As has been pointed out by Wood[6] and by Lyon[7] the counting chambers and the counting pipets are often quite inacurrate, not only the instruments of various makers differing considerably, but also the instruments of the same maker. If these were standardized and certified as are weighing balances or thermometers, this element of error would be removed and a reasonable basis of comparison would obtain.

SUMMARY

Nine hundred and ninety-eight consecutive complete blood counts made with the same instruments throughout and by the same man are studied. The percentage of cases in which they rendered assistance in the diagnosis, prognosis and treatment of disease is indicated. A further grouping of cases clinically based on their blood pictures is suggested, especially under the headings of eosinophilia and large mononuclear leukocytosis. Evidence is offered as to the possible origin of the large mononuclears and the so-called transitional cells, and of the independence of these two cells.

A plea is made for a uniform classification of blood cells, for direct hemoglobin readings in grams rather than on the present variable percentage basis, and for the use of certified standardized instruments.

I wish to thank Dr. Heard for extending to me the privilege of reviewing his patients in this series.

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[6] Wood, F. C.: Clinical and Microscopical Diagnosis, 3d edition, 1915, p. 48.

[7] Lyon, M. W.: Jour. A. M. A., lxviii, No. 9, p. 709.

SELECTION

USING AND MISUSING THE RED CROSS

GELET BURGESS

For the first time in history a nation is going to war with a full equipment of professional nurses. Heretofore half the horrors of the battle field have been due to the lack of competent care of the wounded. Every European nation now engaged in the conflict has had to depend mainly upon amateurs.

The American Red Cross has already organized and is ready to deliver adequate medical provision for an army of a million soldiers. It is the first triumph of Preparedness in the United States. But to keep this force going throughout the war, it needs constant help. There is work enough ahead to employ the services of practically every woman in the country.

Don't think, however, this means that, after having taken a three weeks' course from Red Cross instructors, any woman can don a picturesque costume and fly to France to care for our wounded soldiers. No, she will have to stay right at home and perhaps never see a hero. Her share of the fighting will have to be done with needle and scissors.

This is not an amateur war; we mean business; and our business is to win. We have German efficiency to combat, and if we are to win we must be professional, scientific. Women must be trained to nurse as thoroughly as men are trained to fight. Now, you wouldn't volunteer to be a plumber, or an engineer, or a doctor, would you, without learning the business? Well, it takes at least two, oftener three, years to make a good nurse—two years of hard study and hard work, night and day—two years of patience, self-control, and endurance, attention, obedience, and determination. It is only women who have this experience and this knowledge who will go to France. There are already ten thousand of them enrolled, and more are joining every day.

France was totally unprepared, and France paid the penalty. Nursing, you know, in peace times on the Continent, was considered beneath a lady's dignity—the work was regarded as menial. Nothing was known of such noble and competent women as we see in American hospitals. Why, before the war there were but a few training schools for nurses in all France—those organized by Dr. Anna Hamilton in Bordeaux. Consequently at the outbreak of hostilities the military hospitals were filled with amateurs who rushed to volunteer—only to be shocked and disgusted at what they were expected to do, sickened at the awful sights, sounds and odors; and even those who had the courage to remain were usually incompetent. Many of the devoted women who stood by their posts have, however, gradually developed in skill and efficiency. During the first year in those hospitals chaos reigned. Unnecessary and heart-rending were the suffering and neglect. American nurses, used to modern hospital care, when they arrived and saw the conditions, were horrified. The number of bedsores alone was terrible. Some idea of the wretchedness of those unfortunate wounded soldiers may be gained from their surprise and gratitude at finding that their American nurses would be on duty all night!

In one school for nurses in Italy, after many deaths had occurred in the nightly unattended wards, and only after repeated requests by the American trained superintendent, the old idea that it was improper for a woman to stay at night in a room where there were men in bed was reconciled only by providing old women chaperons for the pupil nurses.

In England conditions were almost quite as bad. A small Army Nurse Corps of graduate nurses was detailed to the base hospitals; but, although there were many more graduate nurses to be had, all the auxiliary hospitals, through social influence, were turned over to the Red Cross nursing service, composed of amateur volunteers; noble ladies, for the most part, anxious to do patriotic service. Each was in charge of the local Lady Vere de Vere, who wore a fetching uniform, but had perhaps never seen, or at least never attended, a sick patient. Imagine such executive heads giving orders even to the attending physicians! Ignorant and incompetent, they had soon to send for professional nursing help, but they continued in command for a whole year. The M. D.'s dared not protest. The names of peeresses on their visiting lists was too great a temptation to keep silent. It was not until the graduate nurses all over Great Britain appealed to Lord Kitchener, signing petitions by thousands—not until he had delayed even then for documentary evidence of the hospital abuses—that he issued an order that commandants of auxiliary hospitals should be trained nurses. Isn't it a comforting feeling to know that such a thing can't possibly happen to our own boys at the front?

Six fully equipped hospital staffs went to France ahead of our expeditionary force, six others have gone since then, and the American Red Cross has enrolled directors, nurses, doctors, dietitians, orderlies, stenographers, clerks, and mechanics sufficient to mobilize over thirty more complete units. These hospital units are ready to leave at a week's notice. No army hospital in the world will ever have been better equipped. Their high standard is evidenced by the fact that in the units already dispatched even the orderlies who will do the most of the heavy and disagreeable work are college students. As soon as these hospitals are accepted by the Government the whole personnel becomes an integral part of the United States army.

What, then, can the laywoman do—the woman who just now is so anxious to do her bit in the war? The answer must depend upon her idea of the word "bit." There may be a few—and would they were many—who are so deeply impressed with the seriousness of the conflict that they are willing to take the complete nurse's training so as to be prepared, in two years, to replace Red Cross nurses that have been worn out in the service. Undoubtedly they will be needed.

But for the ordinary woman volunteer there is only one right thing to do. Join the Red Cross immediately. Apply—not to headquarters, remember, but to the nearest chapter or branch—and it will tell you what to do. There are several other organizations of women, unfortunately, that have been started to engage the services of women. It is unfortunate that so well-organized and so comprehensive a work as that of the Red Cross should be duplicated by less efficient bodies. One national relief organization of women, enrolling members all over the United States, and with headquarters at Washington, cannot even yet state exactly what work its members are expected to do!

The most urgent need of the Red Cross today is for two things—money and surgical material. The demand for both is almost infinite.

Five per cent. of an army in the field, it is estimated, is in the hospital during the early stages of a campaign. After that the percentage rises steadily because of sickness and exposure as well as because of wounds. The American Red Cross, therefore, is preparing dressings and surgical material for 50,000 patients as a first supply. This amount must be maintained and increased. Its war fund must also provide the necessary hospital equipment, cots, bedding, linen, cooking utensils, and other material.

Up to three years ago the Red Cross had worked only for the relief of the civil population in time of calamity, but those sudden demands upon it had gradually strengthened and perfected its organization and efficiency. During the Mississippi flood, the Omaha tornado, the Salem fire, the San Francisco earthquake —in every great disaster, in fact, that has occurred for years in the United States and abroad—the American Red Cross has rendered effective aid. At the outbreak of the war, therefore, it was ready to undertake permanent operations on a larger scale, not only in connection with the beligerent armies, but for the relief of war-devastated countries.

Our own entry into the world conflict has increased its work a hundredfold. Not only did it have to continue its routine of relief work, standardize all material, and organize new hospital units, but it had to cope with an immense outburst of popular patriotism that was largely as misguided as it was enthusiastic. Even yet it is with the swamping effect of this bulk of frequently unnecessary business that the Red Cross is much concerned.

Before the beautiful new building in Washington had been dedicated and occupied as a headquarters it was already outgrown and an annex was being built. In the surgical-dressing department, for instance, the staff had increased since February 3 to the date of my visit from one to fifteen. Fully half its work is due to the thoughtlessness of Red Cross members who will *not* read instructions, will not use ordinary consideration in writing to headquarters. Thousands are burdening headquarters with business that should be transacted through the nearest chapter or branch. The public seems to have gone crazy over war work and lost its common sense.—*Collier's Weekly*.

EFFECT OF ANESTHESIA AND OPERATION ON KIDNEY FUNCTION

AS SHOWN BY THE PHENOLSULPHONEPHTHALEIN TEST AND URINARY ANALYSIS

Ralph Colp (*American Journal of the Medical Sciences*, June, 1917) gives the results of his observations on a series of cases and concludes that the average case thirty-six hours after operation showed very little change in kidney function as demonstrated by the phenolsulphonephthalein tests, although 25 per cent. showed urinary changes which in ten days were again negative. The functional activity of the kidney is depressed as the duration of anesthesia is increased, while in short anesthesias the kidney might appear even to be stimulated to a slight degree. As age increases the threshhold activity of the kidney is lessened. In nervous anemic, obese, and arteriosclerotic patients as a rule some effect of the physical or psychical state shows in kidney function. Preexisting conditions of albuminuria tend to cause decreased phthalein excretion, and in the majority of cases of decreased phthalein excretion the effects of kidney depression are evidenced by careful urinary analysis, although these effects are only temporary. For long anesthesias and apparently for nervous patients, gas and oxygen as an anesthetic seems to have the least irritating effect on kidney function.

THE PENNSYLVANIA MEDICAL JOURNAL

Published Monthly **Official Organ of the Medical Society of the State of Pennsylvania**

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McKean—James Johnston, M.D., Bradford.
Mercer—Frank Bleakney, M.D., Grove City.
Mifflin—Paul M. Allis, M.D., Lewistown.
Monroe—William E. Gregory, M.D., Stroudsville.
Montgomery—Benjamin F. Hubley, M.D., Norristown.
Montour—Cameron Shultz, M.D., Danville.
Northampton—Walter D. Chase, M.D., Bethlehem.
Northumberland—Horatio W. Gass, M.D., Sunbury.
Perry—E. Kenneth Wolff, M.D., Ickesburg.
Philadelphia—Samuel McClary, 3d, M.D., Philadelphia.
Potter—Elwin H. Ashcraft, M.D., Coudersport.
Schuylkill—George O. O. Santee, M.D., Cressona.
Snyder—R. W. Johnston, M.D., Selins Grove.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—Carl M. Bradford, M.D., Forksville.
Susquehanna—Dever J. Peck, M.D., Susquehanna.
Tioga—Harry C. Harkness, M.D., Mansfield.
Union—William E. Metzger, M.D., Alvira.
Venango—J. Irwin Zerbe, M.D., Franklin.
Warren—Ira A. Darling, M.D., Warren.
Washington—John B. McMurray, M.D., Washington.
Wayne—William T. McConvill, M.D., Honesdale.
Westmoreland—Ellsmer L. Piper, M.D., Export.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Charles H. May, M.D., York.

All communications should be addressed to the Pennsylvania Medical Journal, Athens, Pa.

The Medical Society of the State of Pennsylvania does not assume responsibility for any statements or opinions published in this Journal.

Athens, Pa., November, 1917

THE VENEREAL PERIL

The public attention now officially called to the disability in army and navy from sexual disease in man has aroused the medical societies of the country to recognize a long-neglected duty. Physicians individually and collectively were long willing to keep silent as to the public menace of gonorrhea and syphilis. They contented themselves with treating venereal lesions in young and old, often with scarce a hint of their gravity to health and home.

Not much effort was given to enforcing sexual continence on adolescent men, though their sisters were carefully protected, by maternal advice and vigilant observation, from lapses in chastity. Many of us physicians have had as patients at one time in private practice both father and son with gonorrhea or syphilis contracted from illicit intercourse. Such a combination of mother and daughter in respectable homes is, and has been, almost unthinkable.

The ever-present sword of an avenging husband or father has caused women from the earliest ages to believe chastity essential to life and happiness. It is time that avenging wives and mothers should purify the homes of their sons and daughters by refusing admission to parlor, reception room and dinner table of "sowers of wild oats." The chaste daughter has no safe place in the dancing embrace of a young man suspected of being a whoremonger.

Let there be no double standard of virtue and purity as there is no double standard of honesty and truth. Continence in the male is as essential and as valuable an asset as is continence in the female. The disability and degradation of wives from marital gonorrhea was generally recognized and admitted by gynecologists so soon as the etiology of chronic pelvic disorders of women was understood. In addition, the utilization of the Wassermann test for obscure symptoms of syphilitic origin has opened the eyes of physician, clergyman and jurist to the illimitable ravages of promiscuous sexual relations.

These lines have been penned to direct atten-

tion of the reader to the Resolutions on Control of Venereal Infections adopted at the recent meeting of the Medical Society of the State of Pennsylvania, and published in the Tuesday afternoon Minutes of the House of Delegates in this number. They are worthy of careful consideration.
J. B. R.

THE PHYSICIAN AND THE WAR

An examination of the statistics furnished by the office of the Surgeon-General, showing the number of commissions in the Medical Officers Reserve Corps recommended by the Surgeon-General up to September 15, as given at the close of this article, speaks well for the patriotism of physicians of our own state, as on that date Pennsylvania stood third in the percentage of commissions recommended. There, is, however, little advancement where there is self satisfaction. If the profession in Pennsylvania is in the lead at the present time there is all the more reason why every physician who is able to enter the service and who can be spared from his community without too great a sacrifice, should present his application to the nearest examining board at once.

It is true that there are important hospitals in the state that have already been seriously crippled by reason of some or all of the staff entering the service, and there are communities that are left without adequate medical men. There are, however, other hospitals that can spare some of their staff, and there are localities from which few physicians have gone. Each physician knows his own condition and circumstances better than they are known by his neighbors, and we should be slow to censure a brother practitioner because he does not make application for a commission. The fact remains, however, that at this critical time our country needs more medical men. It will not be pleasant for the physician who lives to regret that he did not do his part in his country's great struggle for democracy. As suggested by Dr. Victor C. Vaughan at the Pittsburgh Patriotic Rally, the physician who can go and does not go will have to answer the question to his own children as to why he did not do his part in his country's hour of need. Especially is this true of the younger physician. Never again will such an opportunity be offered him to serve his country, as well as his own best interests. The experience which he will gain in active service will be worth more in a professional way than he could acquire in years of practice in civil life.

COMMISSIONS IN M. O. R. C. RECOMMENDED BY THE SURGEON-GENERAL

	Medical Population	Sept. 15	Per Cent.
Nevada	154	29	18.9
Arizona	307	57	18.3
Pennsylvania	11,502	1,801	15.7
Montana	636	96	15.1
Florida	1,321	194	14.7
Maryland	2,292	335	14.6
Michigan	4,360	596	13.5
North Carolina	2,102	278	13.1
Dist. of Columbia	1,482	194	13.0
North Dakota	586	76	13.0
Kentucky	3,584	452	12.6
Nebraska	1,911	238	12.4
Minnesota	2,247	300	12.3
Kansas	2,683	285	12.3
New York	15,670	1,876	12.0
Washington	1,695	204	12.0
Oregon	1,187	140	11.8
Utah	465	54	11.6
New Jersey	3,239	370	11.4
Wisconsin	2,803	311	11.0
Illinois	10,648	1,159	10.9
South Dakota	676	73	10.8
Delaware	261	28	10.7
Mississippi	2,048	213	10.4
Idaho	439	46	10.3
California	5,687	582	10.1
Alabama	2,568	257	10.0
New Mexico	430	43	10.0
Indiana	4,872	481	9.9
Connecticut	1,678	163	9.7
Louisiana	2,060	197	9.6
South Carolina	1,399	134	9.6
Massachusetts	5,869	553	9.4
Missouri	6,399	603	9.4
Texas	6,240	582	9.3
Virginia	2,547	231	9.1
Iowa	3,751	337	9.0
Vermont	668	60	9.0
West Virginia	1,729	156	9.0
Ohio	8,045	716	8.9
Oklahoma	2,634	230	8.8
New Hampshire	690	59	8.5
Rhode Island	772	65	8.4
Georgia	3,421	275	8.1
Tennessee	3,447	270	7.8
Maine	1,205	90	7.5
Colorado	1,733	129	7.3
Arkansas	2,637	135	5.1
Wyoming	251	12	4.8

SUITS FOR ALLEGED MALPRACTICE

One of our members recently sued for alleged malpractice neglected to make application for assistance from the Medical Defense Fund for thirteen weeks after he had been sued, while the first regulation governing the Medical Defense Fund as given below requires application to be made within thirty days after service of summons. He gave as his reason for the delay that he did not know that the society had a Medical Defense Fund. The question arises: Does that member read the receipt he receives from the secretary of his county society for annual dues, does he read the Journal, or does he attend the meetings of his county society?

Each secretary is furnished with a blank Application for Medical Defense for the use of any member in his society sued or threatened with suit for alleged malpractice. If any secretary has not such a blank on hand he should apply at once to the state secretary for one.

At least once a year there should be upon the program of the county society meetings a place for discussing the advantages of membership in the organized medical profession, which includes the county, state and national societies.

The eight regulations given below were adopted by the House of Delegates at Pittsburgh, Sept. 22, 1914, and this is the third time they have been published in the Journal since that date. The regulations are also printed upon the back of the application blank. Some of them may seem a little arbitrary, but ten years' experience in the work of the fund has shown them to be in the interest of the member sued. There are various reasons why the member sued or threatened with suit should not engage an attorney until after he has brought the matter to the attention of the councilor for the district. It would not be wise to publish some of these reasons, even if space permitted. The wishes of the member are always considered by the committee having charge of his defense.

One hundred and twelve cases have been handled by the society during the past ten years, and in only one year has the Council spent more in the defense of members than was set aside that year for the purpose. The treasurer's report at Pittsburgh showed a balance of $6,731.99 in the Medical Defense Fund, $3,000 being invested in 4½ per cent. bonds, and the remainder on interest in the bank.

REGULATIONS GOVERNING THE MEDICAL DEFENSE FUND

1. A member sued or threatened with suit for alleged malpractice should at once fill out the application blank which can be secured either from the secretary of his county medical society, from the secretary of the state medical society or from the councilor for the district. The society will not undertake the defense of any member unless his application is made within thirty days after service of summons.

2. The application must be endorsed by unanimous vote of all the censors of his county society present at a special meeting called for this purpose, after a rigid examination of all the facts in the case, not only as regards the applicant's membership and standing in his society but also as regards the worthiness of the applicant's case. It should be understood that the endorsement of the censors of a county society carries with it not only moral support, but their active participation in the conduct of the trial in any way they may best assist, and all without thought of pecuniary return.

3. As soon as the application has received the endorsement of the censors of the county society, it should be sent to the councilor of the district for his endorsement. The society will not be responsible for attorney fees incurred in the defense of any member, the defense of whom has not been approved by the councilor for the district.

4. After the application has received the endorsement of the county society censors and the councilor for the district, the management of the member's defense will rest with a committee of the council consisting of the councilor for the district, the president and the secretary of the state society.

5. The applicant should sign a contract vesting in the committee of council sole authority to conduct the defense of his suit, and he should agree to make no compromise or settlement of the case without the consent of the councilor of his district given in writing.

6. The state society will not undertake the defense of any member who after investigation by the censors and councilor for the district is believed guilty of criminal abortion, feticide, homicide or any criminal act or who has not conformed to the recognized ethical laws in regard to these cases. It will only defend suit brought in the course of legitimate professional work.

7. The state society will not pay any expenses for serving subpoenas nor the expense of witnesses residing within the county, nor will it pay judgment or fine awarded or imposed by the jury or court.

8. It should be understood by the members of the state medical society that the amount in the Medical Defense Fund is not large, and in all probability, it will be years before this fund will provide unlimited resources for defense of suits against members. Consequently this fund should be conserved by every effort on the part of the membership of this society.

TO OFFICERS AND MEMBERS OF COUNTY SOCIETIES

The retiring president of a county society, however much or little he may have done during the year for his society, should during the remainder of his term of office do all that he can to enable his society to begin the work of the next year with enthusiasm for good work.

The members should see that the best men are elected to office regardless of age, service or favoritism. By "best men" is understood the men or women who will do the best work for the society, the profession and the community. The following editorial in the *Ohio State Medical Journal* is as good for Pennsylvania as it is for Ohio:

NOW IS THE TIME

Right now, at the beginning of the fall season, is the time to overhaul your county medical society and inject new life.

The general disorganization caused by war preparations has had its effect on medical organizations in many communities. This must not be. There never was a time in the history of the state when the need for intensive organization was greater. There never was a time when it was more necessary to maintain a high standard of efficiency in the medical profession. Not only problems incidental to wartime are pressing, but many home conditions will need attention during the coming months. It is of the greatest possible importance that county medical societies keep in touch with the survey that has been started by the state in the field of sickness insurance. The executive secretary has arranged to keep the legislative committeemen of each society in close touch with the progress of this survey, and these problems as they arise should be made the subject of careful discussion in county society meetings. This is a big subject—the biggest that has ever faced the profession in this state, and unless we keep in touch with it from the start irreparable damage may be done.

KEEP IN TOUCH WITH YOUR DISTRICT COUNCILOR. IF HE DOESN'T VOLUNTEER TO VISIT YOUR SOCIETY, GET AFTER HIM. KEEP HIM INFORMED AS TO YOUR PROGRAMS, AND IF THERE IS INTERNAL TROUBLE IN YOUR ORGANIZATION, CALL HIM IN.

And, for goodness' sake, support your county society officers when they attempt to speed up things and get results. Remember, they are not paid to cajole you into attending meetings or reading a paper. They are doing it, unselfishly, in an honest endeavor to improve medical practice conditions in your county, your state and the nation.

PHILADELPHIA AS A POSTGRADUATE MILITARY MEDICAL CENTER

Last spring the Surgeon-General of the Navy authorized the establishment at Philadelphia of a short course of training in Internal Medicine for medical officers of the navy. This was conducted by Philadelphia members of the Naval Reserve Corps and civilian surgeons. Review study in anatomy, diagnosis and treatment was given at Jefferson Medical College and other institutions.

Last month a similar course in Physiology, Symptomatology and Operative Surgery of the Brain and Spinal Cord was provided for army medical officers at the University of Pennsylvania under the direction of the Surgeon-General of the Army. It is now announced that this month a course in Oral and Plastic Surgery of the Face will be conducted at the Evans Institute of Dentistry in connection with the Jefferson Medical College, the University of Pennsylvania, Temple University and the other medical schools of Philadelphia. Surgeon-General Gorgas evidently means to have his medical corps well grounded in special surgical subjects.

The abundant clinical material at the Philadelphia General Hospital has been able to provide a large opportunity for clinical observation by the visiting army and navy surgeons detailed to come to these postgraduate courses.

J. B. R.

THE WAR TAX

Every physician should at once write the collector of internal revenue for his district, requesting an official blank to be used in making the returns required by the war revenue bill, which became a law on October 3, 1917. A failure to make such returns will render the person liable to both fine and imprisonment.

PAYMENT OF PER CAPITA ASSESSMENT

The *per capita* assessment for the year 1917 has been received from component county societies since August 31, as acknowledged on page 846 of the September Journal, as follows:

Sept. 1,	Lackawanna	189	6839	$ 2.75
Sept. 8,	Lancaster	136	6840	2.75
Sept. 12,	Franklin	53	6841	2.75
Sept. 13,	Elk	24	6842	2.75
Sept. 14,	Northampton	122	6843	2.75
Oct. 3,	Berks	113	6844	2.75
	Westmoreland	153	6845	2.75
	Union	17	6846	2.75
	Luzerne	198–208	6847–6857	30.25
Oct. 4,	Venango	56	6858	2.75
	Cumberland	42	6859	2.75
Oct. 8,	Lancaster	137–138	6860–6861	5.50
Oct. 11,	Clearfield	69	6862	2.75
Oct. 16,	York	127–128	6863–6864	5.50
Oct. 18,	Armstrong	63	6865	2.75
Oct. 22,	Lycoming	103	6866	2.75
	Lebanon	31–34	6867–6870	11.00
Oct. 23,	Tioga	38	6871	2.75
Oct. 25,	Allegheny		6872–6878	19.25
Nov. 2,	Philadelphia	1825–1830	6879–6884	13.75

The *per capita* assessment for the year 1918 has been received from component county societies as follows:

Oct. 25,	Wayne	1–8	1–8	$22.00

ONLY ONCE A YEAR

Thanksgiving, Christmas, New Year and 1918 dues all come within the next sixty days. The first three events will soon be over except for a pleasant remembrance, and so will the matter of county society annual dues if only they are promptly paid on January 1 when they become due. Try it once if you do not believe it. Eight members of the Wayne County Medical Society paid their dues on October 18. Which society will be the first to report all its members as having paid?

A new ruling of the postal authorities requires that the full address of all subscribers, including name of street and number or office building, be given on publications going to towns or cities having free delivery. Journals not so addressed will be classed as unmailable matter. Will county secretaries kindly remember this when filling out receipts for members. Please ask for the correct address in full and write the same plainly.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported up to October 30:

Allegheny County: *New Members.*—Charles F. Butler, Nancy B. Graighead, Lawrence E. Rectenwald. Pittsburgh; John C. Kerr, Castle Shannon; Frank L. Morrow, Braddock; Walter J. Lace; J. C. Mahan. *Deaths.*—Robert B. Ferree (University of Pittsburgh, '87) in Pittsburgh, October 15, aged 54; John E. Rigg (College of Physicians and Surgeons, Baltimore, '79) in Wilkinsburg, October 3, aged 63; William C. Shaw (Bellevue Hospital Medical College, '72) in Pittsburgh, September 18, aged 71. *Removal.*—James L. Gilmore from Pittsburgh to 617 Whitney Ave., Wilkinsburg.

Armstrong County: *New Member.*—William W. Leech, Apollo.

Cambria County: *Death.*—Fremont C. Jones (University of Pennsylvania, '85) in Ebensburg, October 4, from heart disease, aged 55. *Removal.*—William C. Kessler from Ebensburg to 1838 South Twenty-Second St., Philadelphia.

Chester County: *Removals.*—Franklin C. Brush from Conshohocken to 1509 East Susquehanna Ave., Philadelphia; Jacob J. Sweigler from Kennett Square to 4005 Ogden St., Philadelphia.

Clearfield County: *New Member.*—James A. Miller, Grampian. *Removal.*—Francis G. Bennett from St. Marys (Elk County) to Freeport (Armstrong County).

Clinton County: *Removal.*—Theodore E. Teah from Renovo to 103 West Main St., Lock Haven.

Cumberland County: *Death.*—Americus R. Allen (University of Pennsylvania, '87) in Carlisle, September 26, aged 55.

Erie County: *Removal.*—Frank W. Beck from Girard to 408 East Sixth St., Erie.

Indiana County: *Removal.*—Frank B. Stevenson from Indiana to 155 West Susquehanna Ave., Philadelphia.

Lancaster County: *New Members.*—Albert S. Blough, Elizabethtown; Evans D. Russell, Reamstown.

Lebanon County: *New Members.*—Edwin B. Marshall, Isaac K. Urich, Annville; Milton B. Fretz, Palmyra; Dr. Boltz.

Lycoming County: *New Member.*—M. L. Raemore, Williamsport.

Mercer County: *Removal.*—Emma Hodge-Worrall from Greenville to Pulaski (Lawrence County).

Monroe County: *New Member.*—George S. Travis, East Stroudsburg.

Northampton County: *Removal.*—George H. Hess from Easton to York and Welsh Rd., Willow Grove (Montgomery County).

Philadelphia County: *Deaths.*—Charles Cadwalader Corson (University of Pennsylvania, '06) in Philadelphia, October 4, aged 35; David Miller Dry (Jefferson Medical College, '13) in Philadelphia, September 7, aged 28; Eli L. Klopp (Jefferson Med. Coll., '89) in Philadelphia, September 29, aged 61. *Removal.*—Samuel H. Gilliland from Philadelphia to Ambler (Montgomery County).

Potter County: *Transfer.*—William H. Tassell to Wayne County Society.

Tioga County: *New Member.*—Howard M. Farwell, Westfield.

Wayne County: *New Member.*—William H. Tassell, White Mills (by transfer from Potter County Society).

York County: *New Members.*—William L. Crawford, Dillsburg; John E. DeHoff, York.

STATE NEWS ITEMS

MARRIED

Dr. John F. Mecluskey and Miss Pauline J. Grotz, both of Philadelphia, October 15.

Dr. Thomas H. Gilland, Greencastle, and Miss Daisy B. Daley, Baltimore, Md., October 17.

Dr. Forrest Leroy Schumacher, DuBois, and Miss Emma Vail, Punxsutawney, October 3.

DIED

Dr. Myron Dwight Gray (Univ. of Pennsylvania, '74) in Cambridge Springs recently, aged 65.

Dr. William U. Truckenmiller (Buffalo University, '68) in Allenwood, September 30, aged 76.

Dr. Frederick B. Quackenbush (Univ. of Pennsylvania, '01) in Philadelphia, October 6, aged 50.

Dr. Harry Morris Capwell (Temple Univ., Philadelphia, '15) in Meshoppen, September 22, from tuberculosis.

Dr. Archibald Graham Thomson (Univ. of Pennsylvania, '92) in Philadelphia, October 23, from heart disease, aged 48.

Dr. William Francis Brady (Jefferson Med. Coll., '84) in Scranton, September 18, from angina pectoris, aged 53.

Dr. Stephen C. Spaulding (Univ. of Maryland, School of Medicine, Baltimore, '70) in Shenandoah, October 11, aged 73.

Dr. Henry A. Litzenberger (Medico-Chirurgical Coll., Philadelphia, '97) in Walnutport, September 23, from heart disease, aged 44.

ITEMS

Dr. J. Clarence Keeler, Philadelphia, has been appointed assistant professor of otology in Jefferson Medical College.

St. Luke's Hospital, Bethlehem, was on October 18 presented by Charles M. Schwab the new $90,000 ward, the gift of the Bethlehem Steel Company.

Dr. Frank C. Hammond, Philadelphia, has been appointed a member of the Board of Health to serve during the absence in France of Dr. A. C. Abbott.

Dr. Thomas McCrae, professor of medicine in Jefferson Medical College, has returned from military work in England and resumed his teaching and practice.

Tree Memorial to Dr. White.—The Walnut Street Business Association, on October 26, planted a red oak tree in Rittenhouse Square in memory of Dr. J. William White.

Health Insurance Commission.—Governor Brumbaugh on October 16 announced the appointment of a commission to study health insurance and report to the next legislature. The members are Hon. William Flinn, Pittsburgh; William Draper Lewis, Philadelphia, and Dr. John B. McAlister, Harrisburg.

The Wayne County Medical Society met at Hawley, October 18, and was addressed by Dr. Daniel A. Capwell, Scranton, on "Diseases of the Stomach and Digestive Tract." There were ten members present, eight of whom paid their dues for 1918. Society voted to remit the dues of members in the service.

Notice to Hospitals and Institutions.—The Pennsylvania Committee (Medical Section) of the Council of National Defense has opened its office at Room 515, City Hall. An Information Bureau has been established with a view to supplying institutional vacancies as they may occur with medical men, either in the capacity of interns or visiting physicians. Vacancies in private practice will also be filled whenever possible. All applications for positions or for doctors to fill vacancies should be made to Dr. Chas. Scott Miller, Recording Secretary of the above committee, Room 515, City Hall, Philadelphia.

University Doctors and the War.—Some sixty members of the faculty of the medical department of the University of Pennsylvania have been granted leave of absence and are scattered among cantonments, army and naval stations, training camps, base hospitals and research laboratories. A course in neurology and brain surgery has been conducted under the direction of Dr. Charles H. Frazier, assisted by Drs. George M. Dorrance, anatomy; Theodore Weisenburg, physiology; S. D. Ludlum, pathology; George P. Müller, operative surgery on the cadaver, and William G. Spiller, neurological diagnosis. Some fifty officers of the Medical Reserve Corps from various parts of the United States have been under instruction the better to fit them for work along these lines.

Jefferson Hospital Unit.—The 152 men of the Jefferson Base Hospital Unit, No. 38, under Major J. S. Lambie, have gone into their new quarters at the Second Regiment Armory, where preparations are being made to give the men a thorough training for their special duties. Major W. M. L. Coplin, director of the unit, and Capt. Frank H. Husted will also have their offices at the armory. Arrangements have been made with several of the hotels and hospitals where the men of the unit will receive training in the actual work of cooking and hospital attendance. After a man has spent a certain length of time in one institution he will be transferred to another until his training is completed, the hospital and cookery lessons being interchanged.

University Students to Have Free Treatment.—The following circular has been sent to parents or guardians of students of the University of Pennsylvania: "Among the students of the University of Pennsylvania there annually occur many cases of illness requiring medical care and in some instances hospital treatment. The coropration of the university has given earnest consideration to the question of how best to insure the prompt discovery and proper treatment of illness among the students and has adopted the following plan, which will make medical service so easily obtained that there can be no occasion for students to neglect even the most trivial ailment. Parents and guardians are urged to impress on their sons or wards the necessity of consulting a physician in case of all illnesses, however slight they may appear. It is also requested that on entering the university, and each year on returning, the student present a statement from his family physician as to his physical condition for reference to the students' physicians. It is not the intention of the authorities of the university to dictate in the selection of physicians, but merely to name reliable advisers for students whose parents or guardians may have no acquaintance with any physician in Philadelphia. The trustees have appointed Dr. J. C. Birdsall and Dr. F. G. Harrison, to act as students' physicians, under the guidance of Dr. Thomas C. Kelly, and they will conduct a daily students' dispensary at the University Hospital, from 1 to 1:45 o'clock, at which time any student of the university may consult them free of charge. If the service of specialists is required, students will be referred to the proper dispensary chief. In case of sudden emergencies, the students' physicians will visit students, free of charge, at their rooms in the dormitories or private boarding houses. The board of managers of the University Hospital have set aside a private ward for the exclusive use of students. In case of any illness requiring hospital treatment the charge will he $1.50 per day. Contagious diseases are by law required to be sent to the Municipal Hospital, but if treatment of minor contagious diseases is permitted in the isolation ward of the hospital, a special nurse will be employed and her services must be paid for by the student. Students who prefer to consult the students' physicians at their private offices instead of the dispensary will be expected to pay a nominal fee, and house or dormitory visits to students who do not wish to enter the students' ward of the hospital will also be charged for at a nominal rate. Students requiring hospital care, who do not wish to enter the students' ward, will be admitted to private rooms in the hospital at the usual rate for rooms and medical attendance."

GENERAL NEWS ITEMS

The Indiana State Medical Society, at its recent meeting in Evansville, elected Dr. Joseph Rilus Eastman, Indianapolis, president.

The Ohio State Medical Society held its annual meeting in Dayton, September 27-28. Dr. E. M. Huston, Dayton, was elected president.

Poliomyelitis in Chicago.—On September 28 there were said to be 155 cases of infantile paralysis in Chicago, and between forty and fifty cases in Cook County outside the city.

Dr. Edward Jackson, Denver, was elected president of the Colorado State Medical Society at its Forty-Seventh Annual meeting in Colorado Springs, September 25-27.

American Doctors Abroad.—According to a London journal, there are now over 900 American medical men serving with the British forces in Great Britain and France.

Dr. Jonathan Leigh, Hiawatha, Kan., who celebrated his one hundredth birthday anniversary on September 24, died October 9, from heart disease. He practiced medicine for sixty years in Doniphan County.

Increased Hospital Rates.—The hospitals in Baltimore have asked the city to pay $1.75 a patient a day instead of the existing rate of 62½ cents a patient a day, because of the high cost of food, medicine, gauze and fuel.

Pediatrics, a New York Monthly, edited by Dr. William Edward Fitch, has been discontinued and will be incorporated hereafter with *The Medical Review of Reviews,* which will continue to be edited by Frederick H. Robinson.

Draft Physician Punished.—Dr. Henry Seligman, Brooklyn, is said to have been convicted, October 3, of a conspiracy to cause the evasion of the selective draft law, and to have been sentenced to two years' imprisonment in the United States Penitentiary, Atlanta, and to pay a fine of $3,000.

Sir Berkeley Moynihan to Visit America.—Sir Berkeley Moynihan, senior consulting surgeon to the Royal Army Medical Corps of the British Army, and inspector of army hospitals in France, has been delegated by the British Government to come to America to aid in the war preparation of the Medical Corps of the U. S. Army.

Lectures on Skin Diseases.—The governors of the New York Skin and Cancer Hospital announce that Dr. L. Duncan Bulkley, assisted by the attending staff, will give the nineteenth series of clinical lectures on diseases of the skin in the outpatient hall of the hospital on Wednesday afternoons, beginning November 7, at 4:15 o'clock.

National Board Examination.—The third examination of the National Board of Medical Examiners was held in Chicago, October 10-18. Twenty-eight candidates were examined, of whom twenty-two passed. Arrangements have already been made for another examination, which will be held at the Bellevue Hospital, New York City, Jan. 9-17, 1918.

The Delaware State Medical Society held its one hundred and twenty-eighth annual meeting in Middletown, October 10. The following officers were elected: president, Dr. G. W. K. Forrest, Wilmington; first vice president, Dr. Roland G. Paynter, Georgetown; second vice president, Dr. James Marshall, Harrington; secretary, Dr. W. O. LaMotte, Wilmington; treasurer, Dr. S. C. Rumford, Wilmington.

Manufacture of Atropin. — Previous to the war little or no atropin was manufactured in this country. In 1912, Eli Lilly and Company began experimenting in the culture of belladonna, and in 1915 placed on the market the first atropin manufactured in the United States. This firm has also found it practicable to obtain atropin from stramonium, Jimson weed, and last year purchased 1,600,000 pounds of the green herb.

Red Cross Bureau of Medical Service.—The Red Cross War Council announce the establishment of a Bureau of Medical Service of Foreign Commissions. Dr. R. M. Pearce, Philadelphia, is director of the new bureau. Its purpose is to give prompt and expert attention to the requests for medical and surgical supplies received from the American Red Cross commissions now at work in France, Russia, Roumania, Italy and Serbia.

Stenographers and Typewriters are urgently needed by the departments and offices at Washington. Examinations for the departmental service for both men and women are held every Tuesday in the principle cities of the United States. Applicants must have reached their eighteenth birthday. The entrance salary ranges from $1,000 to $1,200 a year. Apply to John A. McIlhenny, President, U. S. Civil Service Commission, Washington, D. C.

Council on Pharmacy and Chemistry. — During October the following articles were accepted for inclusion with New and Nonofficial Remedies: Arsenobenzol (Dermatological Research Laboratories, Philadelphia Polyclinic), General Drug Company; acetylsalicylic acid capsules-Milliken, acetylsalicylic acid tablets-Milliken, Jno. T. Milliken and Company; acetylsalicylic acid (aspirin), Monsanto, Monsanto Chemical Works; atophan, S. & G., Schering and Glatz; silver protein-Squibb, E. R. Squibb and Sons; stanolind surgical wax, Standard Oil Company of Indiana.

Civil Hospitals May Be Used by Government.—It was announced in Washington on October 24, that civil hospitals in the region of training camps will be used where necessary for overflow patients from the divisional army hospitals. Ordinary hospital rates will be paid by the government, but army doctors and surgeons are expected to attend the patients. Men who lose their minds, should relatives be prepared to care for them, will be discharged and sent home. Otherwise, if the disability was incident to their duty, they will be sent to government hospitals. If not incurred in line of duty, they will be sent to hospitals in their own state to be cared for under state appropriations.

Urge Government Control of Narcotic Drugs.—As a result of the disclosure of the extent of criminal traffic in narcotic drugs in New York the Federal Grand Jury has passed unanimous resolutions asking United States Attorney Caffey to take the matter up with the federal government. These resolutions contain recommendations urging that chemists and internal revenue inspectors be assigned to every plant where the drugs are manufactured; that the product be shipped to government warehouses in zones to be established; that the government should control the price, the quantities shipped to wholesale druggists, jobbers, dealers, retailers and pharmacies, all of whom, and manufacturers as well, should be bonded and licensed, and that the government should control exports and imports. The resolutions request that an adequate bill be prepared for presentation to Congress that will prevent the continuance of conditions such as have been brought to light by the investigations of the internal revenue inspectors in New York.

The Alvarenga Prize.—The College of Physicians of Philadelphia announces that the Alvarenga Prize for 1917 has been awarded to Dr. Wilbur C. Davison, Baltimore, for his essay entitled "The Superiority of Inoculations with Mixed Triple Vaccine (*B. typhosus, B. paratyphosus* A and *B. paratyphosus* B) Over Successive Inoculations with the Single Vaccines, as Shown by Agglutinin Curves in Men and Rabbits." The next award of the prize, being the income for one year of the bequest of the late Señor Alvarenga, amounting to about $250, will be made, July 14, 1918, provided an essay deemed by the committee of award to be worthy of the prize shall have been offered.

Essays for competition may be on any subject in medicine, but cannot have been published. They must be typewritten, and if written in a language other than English, should be accompanied by a translation. They must be received by the secretary, Dr. Francis C. Packard, 19 South Twenty-Second Street, Philadelphia, on or before May 1, 1918. Essays must not be signed, but must be marked with a motto, and accompanied by a sealed envelope having on the outside the motto, and inside the name and address of the author.

Expenses Connected with Commission in Reserve Corps.—It has been reported to the Surgeon-General's Office that there is quite a bit of misunderstanding or misinformation on the part of applicants for the Medical Reserve Corps as to the cost of field outfit and other expense connected with accepting commission in the Reserve.

One common error is that the field outfit costs not less than $300. An officer of the Reserve may easily spend this amount of money on his outfit should he so desire, but it is entirely an unnecessary expenditure and an extravagance. Most officers of the army buy their service uniforms from the Quartermaster Corps. The prices July 1, 1916, were as follows: Coat, cotton, olive drab, $1.33; woolen, olive drab, $3.95. Shoes, russet, $2.81. Overcoat, olive drab, $9.04. Trousers, cotton, olive drab, $1.19; woolen, olive drab, $2.62. Cot, folding, $2.06. Each officer should also provide himself with a folding chair, or table, the price of which is about the same as that of a cot; also a lantern and a few other articles. Buckets, canvas, for officers, $0.86. Basins, canvas, $0.36. Owing to the recent increase in prices of raw material and cost of labor, these articles will be from two to two and a half times the prices quoted above.

Blankets (each officer should supply himself with three) may be purchased in the open market at approximately $6 apiece. Bedding rolls cannot now be purchased from the Quartermaster's Department, but should be purchased in open market for about $10. Puttees, about $10 per pair.

It is an unnecessary extravagance for officers to purchase field uniforms at a price of $40, $50 or more.

Mess expense. In the field, officers as a rule mess with their organizations, the cost of which will be approximately $15 per month. Additional expenses will depend on the personal equation of the officer.

The pay of the various grades is as follows: Lieutenant, $2,000; captain, $2,400; major, $3,000, plus 10 per cent. for foreign service.

Fifty dollars per month for an officer in the field would be a very liberal allowance for all expenses. It is understood that a number of medical men refuse to apply for commission in the Reserve Corps on the grounds that the mess dues and other necessary expenses require the full salary of a first lieutenant. Such belief is absolutely incorrect. The expenses are as indicated above, and there is no reason why an officer in the field should not save the greater portion of his pay. In cantonments and camps in the United States the expenses would possibly be slightly higher, but in no case should they prevent an officer from saving a major portion of his pay should he so desire.

By direction of the Surgeon-General,

Robert E. Noble,
Lieut.-Col., Medical Corps, U. S. Army.
Aug. 29, 1917.

BULLETIN EXCERPTS

MEDICAL MONTHLY, BUCKS

Hats Off to Lackawanna and Dr. Van Sickle

"We must find our duties in what comes to us, not in what we imagine might have been."—George Eliot.

Samuel Gibson Dixon, M.D., D.Sc., LL.D., became the president of the Medical Society of the State of Pennsylvania on September 19, and will continue such until the next annual meeting, when the present president-elect, Frederick L. VanSickle, M.D., of Olyphant, Lackawanna County, will assume the presidency for another year.

Lackawanna, after having been a member of the State Society for thirty-nine years, must be congratulated on having been permitted by the "powers that be" to be honored in the gift of presumed leadership of this great organization. For two years dear old Bucks with a membership hearkening back to the birth of the State Society, 1848, was thrown in the "junk-pile" by the "powers that be." Perhaps she got, or her candidate, Dr. Carrell, got what was deserved, and not a word should issue in complaint, but to be candid we think we can distinguish between right and wrong, justice and injustice and can remember promises made and promises broken.

Codman knocked us out on our first try, but we are free to say he made one of the best presidents we can recollect. He was an enthusiastic and persistent worker from start to finish, and we should thank him for the good work he did.

Dixon, by a narrow margin, put the Allegheny and Bucks men out of the running last year, and it is our hope his administration may be as enthusiastic and persistent as Codman's, and that he may be able to improve us educationally, materially and numerically. He is a man of wonderful ability and has already done more for our citizenship than any doctor of his day and generation. The duties he has assumed carry greatest honors and responsibilities, but to both of these he is no stranger.

Bucks county, although unfairly and unkindly treated by the House of Delegates, led by the "powers that be," carries no poisoned arrows in her quiver, and will stand loyally by our beloved State Society. It has been our pleasure and purpose to serve the best interests of our profession in every way we could, and we sincerely hope to assist our splendid leader, Dr. Dixon, in every way we can.

"We must find our duties in what comes to us, not in what we imagine might have been."

BOOKS RECEIVED

Books received are acknowledged in this column, and such acknowledgement must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

Annual Report of the Surgeon General of the Public Health Service of the United States. For the fiscal year 1916. Washington: Government Printing Office. 1916.

A Treatise on Regional Surgery. By various authors. Edited by John Fairbairn Binnie, A.M., C.M., F.A.C.S., Kansas City, Mo. Volume II. With 213 illustrations. Philadelphia: P. Blakiston's Son and Company. Price $7.00.

The Practical Medicine Series. Comprising ten volumes of the year's Progress in Medicine and Surgery. Under the General Editorial Charge of Charles L. Mix, A.M., M.D., Professor of Physical Diagnosis in the Northwestern University Medical School. Series, 1917. Volume VI. General Medicine. Edited by Frank Billings, M.S., M.D., Head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago. Assisted by Burrell O. Raulston, A.B., M.D., Resident Pathologist, Presbyterian Hospital, Chicago: The Year Book Publishers. Price of series of ten volumes, $10.00.

White and Martin's Genito-Urinary Surgery and Venereal Diseases. By Edward Martin, A.M., M.D., F.A.C.S., John Rhea Barton, Professor of Surgery, University of Pennsylvania; Benjamin A. Thomas, A.M., M.D., F.A.C.S., Professor of Genito-Urinary Surgery in the Polyclinic Hospital and College for Graduates in Medicine, and Instructor in Surgery, University of Pennsylvania; and Stirling W. Moorhead, M.D., F.A.C.S., Assistant Surgeon to the Howard Hospital, Philadelphia. Illustrated with 422 engravings and 21 colored plates. Tenth Edition. Philadelphia and London: J. B. Lippincott Company. Price $7.00.

BOOK REVIEWS

NOSTRUMS FOR KIDNEY DISEASES AND DIABETES. Prepared and issued by the Propaganda Department of the Journal of the American Medical Association. 47 pages; deals with 34 nostrums; illustrated. American Medical Association, 535 North Dearborn Street, Chicago. Paper, 10 cents postpaid.

This is the latest pamphlet issued by The Propaganda Department of *The Journal of the American Medical Association* as part of its work in giving the medical profession and the public the facts regarding different phases of the nostrum evil and quackery. Nostrums for kidney disease and diabetes are grouped together in one pamphlet, not because there is any essential relation between diabetes and kidney disease, but because the average quack makes no distinction between the two conditions and recommends his nostrum indiscriminately for both. It is not necessary to tell physicians that drugs will not cure either kidney disease or diabetes but it is necessary to apprise the public of this fact. Whatever justification there may be for the sale of home remedies for self-treatment, there is no excuse, either moral or economic, for selling preparations recommended for the self-treatment of such serious conditions as diabetes and kidney disease. Every "patent medicine" sold for the cure of these diseases is potentially dangerous and inherently vicious. The pamphlet is an interesting and instructive one to put in the hands of the layman.

SOCIETIES

PITTSBURGH OPHTHALMOLOGICAL SOCIETY

Meeting of Oct. 1, 1917, at 8 p. m., President Edward B. Heckel presiding

Dr. G. E. Curry presented an eight year old boy with megalocornea associated in the right eye with an unusually large downward coloboma of the iris. There is no coloboma of the choroid. The margin of the lens is seen clearly in the coloboma some little distance from the sclerocorneal junction, thus indicating that this one structure retains its normal size, while all the other portions of the hydrophthalmic eye-ball show increased dimensions. In the left eye the iris is tremulous, and the pupil is fixed by an extensive posterior synechia. A lens of S — 14. gives 20/200 vision in the right eye and S — 12.50 = C. — 3.00 ax 150° gives 20/200 in the left eye. The tension is not noticeably raised in either eye.

This condition has existed since early infancy and apparently is not now progressing. This case demonstrates how some cases of hydrophthalmus may advance to a certain degree and then remain stationary.

Dr. Edward B. Heckel presented a young man who had developed a monocular gonorrheal ophthalmia five days before. The condition had been treated by a method originating with Dr. Heckel and the rapid retrogression of the infection as manifested by this patient was truly remarkable and a powerful comment as to the efficacy of the treatment. Dr. Heckel will later submit full details of this case and his methods of treatment.

Dr. J. C. Markel reported the following good result in a case of spastic entropion by the means of six punctures with the electrocautery:

Mrs. J. S., aged 58, was admitted to the ward complaining of irritation of both eyes due to a pronounced spastic entropion of the lower lids. The condition had been troublesome for two years. It began in the left eye and later both were affected. She had consulted several oculists and was advised to use adhesive strips to draw the lids away from the globes. This was kept up for about a year without relief, in fact, the patient seemed to think that the condition was made worse by it. The skin of both lids and cheek was quite flabby and without tone, lying in folds and deep wrinkles, and the globes were rather deep set. The conjunctiva was deeply injected but the cornea intact. Under local anesthesia, by instillation and hypodermic injection of cocain solution, a Ziegler galvanocautery puncture was made in the left lid, in which the entropion was more marked, six punctures being made 4 mm. apart and 4 mm. from the lid margin. There was practically no reaction nor pain in the lid. A dressing of bichlorid ointment was applied for twenty-four hours. A week later the same procedure was carried out on the right lid. There has been no inversion since and the eyes have been perfectly comfortable.

In discussing, Dr. Heckel stated that he has used collodion in spastic entropion temporarily with good results.

Dr. E. E. Wible presented a case of herpes zoster ophthalmicus in a male mill-worker, aged 51 years. The patient had been treated by his family physician for sixteen days as a case of erysipelas. The herpes were on the right side, extending from two inches within the midfrontal hair line to the tip of the nose and of a width varying from one to two inches. The cornea and conjunctiva were involved, causing profuse lacrimation and intense photophobia. The patient complained of severe burning and itching pain where the skin was involved. The nerve supply to the region affected was from the frontal, lacrimal and nasal branches of the ophthalmic division of the trifacial nerve. The treatment consisted of quinin and acetanilid, the latter to alleviate pain so that the patient might secure some sleep. The U. S. P. carbolic acid ointment was applied locally to the skin, cold compresses to the eye and atropin instillations. This treatment made him reasonably comfortable. Today, thirty days since his attack, the herpes are almost healed, leaving deep pits resembling those of smallpox. The iris at first dilated irregularly but is now circular. The cornea has a number of small opacities, the conjunctiva, both ocular and palpebral, is yet very angry and swollen.

This is the fourth case seen by Dr. Wible and reported in about 20,000 private and hospital cases. Wills Eye Hospital reports five cases in 30,000 patients in that institution.

Dr. Krebs reported a case of melanotic sarcoma in a female of 68, the left eye being affected. A pinpoint black spot was first noticed on the sclera of the eye about ten years ago. It did not change until January, 1916, when she had her first illness of years, a severe attack of influenza with bronchitis, followed by jaundice. During an attack of severe coughing, the black spot became larger (to the size of a millinery-pin head); since, it has grown until it is now 10 by 6 mm. and projects forward about 3 mm. The eye is blind and very hard; pupil contracted and fixed (seclusio pupillæ); anterior chamber very shallow; on transillumination, light reflex is seen through pupil only when applied up and out. There has been no pain or discomfort.

The right eye has 7/30 vision. With —.50 S = —.50 Cy. ax 45° equals 7/20. Visual fields and tension are normal; cornea, anterior chamber, pupil and iris normal. Careful physical examination was negative except for systolic blood-pressure of 190 mm.

In discussing, Dr. Heckel said he had seen a case that simulated staphyloma of sclera, but was found to be a melanotic sarcoma; radium was used, after removal, and the growth was kept under control three years.

Dr. Curry saw a man who had suffered a traumatism of the eye, from a blow with a stick; the pain subsided, but a staphylomatous condition developed. The eye was blind and had normal tension. It was enucleated and on examination was found to contain a diffuse melanotic sarcoma. Two years later there was a recurrence in the orbit.

H. H. Turner, Reporter.

COUNTY SOCIETY REPORTS

BERKS—OCTOBER

The Berks County Medical Society met in Medical Building, October 9, with President Bucher in the chair. A request was received from ex-Mayor Stratton that a relief committee be formed to care for the ill dependents of men in the service.

The subject of "Rheumatism" was discussed by Dr. H. W. Bagenstose. An obstetrical case was discussed by Dr. E. C. Lerch. "Gangrenous Balanitis" was discussed by Dr. M. E. Gruver.

"A Case of Strychnin Poisoning" was presented by Dr. C. E. Schlappich, of which the following is an abstract: Patient, a strong robust man, 45 years of age, a periodical drinker, had been drunk for a week, and one morning consumed almost a quart of gin, emptied a bottle of strychnin tablets, after which he lay on the couch and slept. When I was called at 10 a. m., I immediately gave him a hypodermic of 1/10 grain apomorphin hydrochlorid, which, not producing emesis, was quickly repeated. After this he vomited during the remainder of the day. About this time I noticed a tremor of the muscles of the arm and the face, which started about half an hour after taking the poison. The muscle spasms became more marked and severe until his whole body was stiff; muscles of the face became rigid, angles of the mouth contracted and the face was cyanosed. Pulse was slow and strong; pupils contracted, and body covered with profuse perspiration during the spasms. The spasms prevented giving chloral and bromid per rectum, so ¼ grain morphin and 1/150 grain atropin were given hypodermically, and also inhalations of chloroform. Morphin and atropin were repeated every 15 minutes until three injections were given, then every half hour until five were given in all. During spasms the left shoulder was dislocated which I promptly reduced. Between spasms patient drank milk and water which he quickly vomited. The spasms persisting, I gave a hypodermic of 1/50 grain hydrobromid hyoscin which was followed by cessation of spasms at 6 p. m. He soon recovered except the left arm which was helpless for about two months while the muscles were atrophied. Considering it a drug neuritis due to the strychnin I put him on sodium salicylate and electricity, which was followed by complete recovery.

Clara Shetter Keiser, Reporter.

LEBANON—OCTOBER

The Lebanon County Society met in the courthouse, October 9, at 2:45 p. m.

Dr. John Bucher read a paper on "Eczema—Its Cause and Cure." He considers eczema the most common of skin diseases the physician is called on to treat. About one third of all skin diseases come under its heading. It is no respector of persons for it mars the velvety skin of the society belle and it adds to the rugged and rough nature of "the wanderer's" face. It is also the most important of skin diseases. The redeeming feature of its nastiness is that it can be cured. It is an inflammatory or catarrhal condition of the skin and is always moist. The moist condition is not always readily apparent but on slight rubbing it becomes very evident. There is a thickening of the skin, most marked in the chronic cases. Itching is one of the outstanding symptoms and many a patient has grown weary and disconsolate while in the throes of this tormentor. Dr. Bucher divided his subject into three classes or stages: (a) hyperemia; (b) exudation; (c) terminal. A case of eczema may exhibit all three stages at one time. He said that the German school held eczema to be a local disease, the French championed it as a constitutional disease, while the English accepted both sides of the question. The causes of the disease are not generally understood but a predisposition is made by poor food, bad hygienic conditions, care and overwork. There seems to be an occupational eczema often seen in bakers, grocers, bricklayers, and others. The treatment is a combination of local and constitutional remedies, bearing in mind the extreme value of hygienic influences.

George R. Pretz, Reporter.

THE TRUTH ABOUT MEDICINES

NEW AND NONOFFICIAL REMEDIES

Since publication of New and Nonofficial Remedies, 1917, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Halazone - Abbott. — Parasulphonedichloramidobenzoic acid. It is said to act like chlorine and to have the advantage of being stable in solid form. In the presence of alkali carbonate, borate and phosphate it is reported that halazone in the proportion of from 1:200,000 to 1:500,000 sterilizes polluted water. Halazone is used for the sterilization of water in the form of Halazone tablets, each containing 0.004 Gm. halazone mixed with sodium carbonate and sodium chloride. The Abbott Laboratories, Chicago (*Jour. A. M. A.*, Oct. 6, 1917, p. 1166).

Camiofen Ointment. — An ointment obtained by mixing iocamfen (a liquid obtained by the interaction of iodin 10, phenol 20 and camphor 70 parts) with an equal weight of a lard-wax-oil of theobroma base, but containing nearly all of its iodin in the combined form. It has the properties of fatty iodin compounds, phenol and camphor, and is used in skin diseases. Schering and Glatz, New York (*Jour. A. M. A.*, Oct. 20, 1917, p. 1343).

PROPAGANDA FOR REFORM

Some Misbranded Nostrums.—The following nostrums have been the subject of prosecution by the federal government under the Food and Drugs Act: DeWitt's Eclectic Cure, containing alcohol, opium and ether——DeWitt's Liver, Blood and Kidney Cure, essentially a water-alcohol solution bearing a cathartic drug, together with Epsom salt, nitrates and iodids.——Lightning Hot Drops, containing 60 per cent. alcohol and 48 drops of chloroform to the ounce, as well as ether and capsicum.——Mother's Salve Mother's Remedy, a salve consisting of petrolatum, with some glycerin, potassium chlorate and oils of cloves, cinnamon, eucalyptus, sassafras and pine or juniper.——Raney's Blood Remedy, a solution of potassium iodid and mercuric chloride in syrup of sarsaparilla with 16 per cent. alcohol.——Rattlesnake Oil Liniment, White Eagle Indian Rattlesnake Oil Liniment, containing little or no "rattlesnake oil."——Rosadalis, essentially a water-alcohol solution containing potassium iodid and a cathartic drug (*Jour. A. M. A.*, Oct. 6, 1917, p. 1192).

Ziratol.—The Council on Pharmacy and Chemistry reports Ziratol, sold by the Bristol-Myers Company, New York, ineligible to New and Nonofficial Remedies (1) because its composition is secret; (2) because the phenol coefficient is not stated on the label; (3) because its use by by the public as a "vaginal douche" is advised, and (4) because the claim that Ziratol is the "Universal disinfectant" is unwarranted. The A. M. A. Chemical Laboratory reported that the preparation is a soap solution containing alpha-naphthol as its essential constituent (*Jour. A. M. A.*, Oct. 6, 1917, p. 1191).

Gonosan.—The Council on Pharmacy and Chemistry reports that Gonosan, sold by Riedel and Co., Inc., is in the form of capsules said to contain oil of sandalwood and kava resin advertised for the treatment of gonorrhea (as indicated by the name). It declared Gonosan inadmissible to New and Nonofficial Remedies because the therapeutic claims are exaggerated; because there is no evidence that the combination of kava resin with oil of santal is superior to oil of santal alone, and because the therapeutically suggestive name is conducive to indiscriminate and unwarranted use of the combination both by the profession and by the public (*Jour. A. M. A.*, Oct. 13, 1917, p. 1287).

Alcresta Ipecac.—This preparation of ipecac was admitted to New and Nonofficial Remedies in 1915. Recently claims have been advanced for this preparation which were not contemplated at the time of its acceptance and which appeared improbable and unwarranted in the light of the known properties of ipecac. The Council on Pharmacy and Chemistry brought these extravagant claims to the attention of Eli Lilly and Co., the proprietors of Alcresta Ipecac. As Lilly and Co. would neither discontinue nor modify these claims and did not submit any evidence to warrant them, the Council announces that it has been obliged to delete this proprietary from New and Nonofficial Remedies (*Jour. A. M. A.*, Oct. 20, 1917, p. 1373).

Hepatico Tablets.—The Council on Pharmacy and Chemistry reports that Hepatico Tablets (David Laboratories, Inc.) are claimed to "contain a combination of bile salts, pepsin, pancreatin, ext. nux vomica and cascara," and that in their exploitation the same therapeutic nonsense is made use of as that used in connection with two preparations of similar claimed composition, namely, Veracolate and Taurocol, previously reported on by the Council. The Council declares the therapeutic claims made for Hepatico Tablets unwarranted, the name objectionable and the combination of ingredients irrational (*Jour. A. M. A.*, Oct. 20, 1917, p. 1374).

Some Misbranded Nostrums.—The following "patent medicines" have been declared misbranded under the U. S. Food and Drugs Act: Sherman's Compound Prickly Ash Bitters, containing 20 per cent. alcohol, buchu and an emodin bearing drug.——"Thorn's Compound Extract of Copaiba and Sarsarparilla," a mixture of copaiba and sarsaparilla extract.——"Tarrant's Compound Extract of Cubebs and Copaiba," a mixture of copaiba and cubeb extract.——V. I. G., an aqueous solution of glycerin, morphin, berberin, hydrastin and salicylic acid (*Jour. A. M. A.*, Oct. 20, 1917, p. 1374).

The Active Principle of the Hypophysis.—Despite the suggestion obtained from certain advertising claims, the active principle of the pituitary gland has not been isolated in a pure state. An examination of commercial preparations showed that proteoses and possibly peptones were present in all (*Jour. A. M. A.*, Oct. 27, 1917, p. 1431).

Haines' Golden Treatment.—This is sold by the Golden Specific Co., Cincinnati, Ohio, as a cure for the liquor habit, which may be administered without the knowledge of the patient. The directions which accompany the three dollar package imply, however, doubt as to the probability of success unless the patient is anxious to be cured of the habit and takes the powders knowingly. The A. M. A. Chemical Laboratory reports that this worthless nostrum consists of powders which are composed essentially of milk sugar, starch, capsicum and a minute amount of ipecac (*Jour. A. M. A.*, Oct. 27, 1917, p. 1460).

OFFICIAL TRANSACTIONS

MINUTES OF THE PROCEEDINGS OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA, AT THE SIXTY-SEVENTH ANNUAL SESSION, HELD IN PITTSBURGH, SEPT. 24-27, 1917.

MINUTES OF THE HOUSE OF DELEGATES

Monday Afternoon, Sept. 24, 1917

The House of Delegates of the Medical Society of the State of Pennsylvania was called to order in the William Penn Hotel, Pittsburgh, at 3:15 p. m., Monday, Sept. 24, 1917, by the President, Dr. Charles A. E. Codman, Philadelphia, who addressed the House of Delegates as follows:

It gives me great pleasure to call to order the House of Delegates of the Sixty-Seventh Annual Session of the Medical Society of the State of Pennsylvania. We are meeting today under circumstances somewhat different from those of any time in the history of this organization. Many of our men are absent, having responded to the call to the colors, and it behooves all present to take part in the proceedings of the House of Delegates, and to constitute ourselves a committee of the whole to endeavor to make this meeting a success.

We want you liberally to patronize the Commercial Exhibit and take all your friends to see those who are showing their wares. It has been difficult for the manager to obtain exhibitors, and it has been difficult to receive material on account of the congestion of the express companies.

However, we are here, and we hope each one will do his part. There will be many matters of vital importance, concerning the welfare of the organization, that will come up. There will be five members of the Board of Trustees to be elected, three having responded to the call to the colors, and two councilors, whose terms have expired and who are not eligible for reelection, owing to the fact that they have served six years.

The Secretary read the following letter from President Elect Dixon:

Mont Alto, Pa., Sept. 17, 1917.

Dr. Cyrus Lee Stevens, Secretary,
Pennsylvania State Medical Society,
Athens, Pa.

Dear Dr. Stevens:

It is made quite apparent that my present illness is not going to permit me to be present at our annual meeting. This is a great disappointment. However, we may hope that a bad beginning may make a good ending.

The results of my investigations for committeemen leads me to appoint the following committees for the House of Delegates:

Committee on Credentials.—Charles W. Youngman, Chairman, Williamsport; Archibald A. MacLachlan, Pittsburgh; Charles A. Rogers, Freeport.

Reference Committee on Reports of Officers and Committees. — Wilmer Krusen, Chairman, Philadelphia; Lewis H. Taylor, Wilkes-Barre; Harry W. Albertson, Scranton.

Reference Committee on Scientific Business.—J. Wesley Ellenberger, Harrisburg; Joseph D. Findley, Altoona; Edward B. Heckel, Pittsburgh.

Reference Committee on New Business.—John D. McLean, Chairman, Philadelphia; Ira G. Shoemaker, Reading; Frank G. Hartman, Lancaster.

The Committee on Credentials made a preliminary report, which was followed by roll call, showing fifty-nine delegates and four nonvoting members present.

The Minutes of the Sixty-Sixth Annual Session as printed in the Pennsylvania Medical Journal for November, 1916, were presented and on motion, duly seconded, were approved.

On motion of Dr. William S. Wray, Philadelphia, seconded by Dr. J. M. Baldy, Philadelphia, the report of the Secretary was accepted as printed in the September, 1917, issue of the Journal, and referred to the Reference Committee on Reports of Officers and Committees, the financial portion of the same being referred to the Board of Trustees.

The report of the Treasurer as printed was presented by Dr. George W. Wagoner, Johnstown, and on motion of Dr. William S. Wray, Philadelphia, seconded by Dr. J. M. Baldy, Philadelphia, accepted and referred to the Board of Trustees.

Dr. Wagoner called the attention of the House of Delegates to the fact that the assets of the State Society at the present time are almost $30,000.

The report of the Board of Trustees as printed was presented, and on motion of Dr. William S. Wray, Philadelphia, seconded by Dr. J. M. Baldy, Philadelphia, accepted and referred to the Reference Committee on Reports of Officers and Committees.

The Secretary presented the following supplemental report of the Board of Trustees, which on motion, was referred to the Reference Committee on Reports of Officers and Committees.

The Trustees unanimously recommend to the House of Delegates that the 1918 *per capita* assessment of any member engaged in the services of the United States or her Allies be remitted provided his county society remits his annual dues to the county society.

Dr. Edward B. Heckel, Pittsburgh, moved that all reports printed in the September Journal and distributed to the members of the House of Delegates be referred to their respective committees. This blanket motion was duly seconded and carried.

The reports of the nine individual councilors as printed were referred to the Reference Committee on Reports of Officers and Committees.

Report of the Committee on Scientific Work

Dr. Henry D. Jump, Philadelphia, chairman of the committee, reported that an arrangement had been made by which, in the event of a gentleman on the program being called away for military or naval duty, the rule of the Society would be overlooked at this time and his paper read by a substitute or read by title.

The report of the Committee on Public Policy and Legislation together with the reports of the following subsidiary committees, Committee on Defense of Medical Research, Committee on Promotion of Efficient Laws on Insanity, Commission on Conservation of Vision, and the Commission on Medical Expert Testimony, were presented as printed and referred to the Reference Committee on Reports of Officers and Committees.

The report of the Committee on Society Comity and Policy was presented as printed and referred to the Reference Committee on Reports of Officers and Committees.

The report of the Committee on Health and Public Instruction, including the report of the subsidiary Commission on Cancer, was presented as printed and referred to the Reference Committee on Reports of Officers and Committees.

The report of the Committee on Medical Benevolence was presented as printed, and referred to the Trustees.

The report of the Committee on Quarantine Service at the Port of Philadelphia was presented as printed and referred to the Reference Committee on Reports of Officers and Committees.

The report of the Committee on Archives was presented as printed and referred to the Reference Committee on Reports of Officers and Committees.

The report of the delegates to the Medical Society of the State of New York was presented as printed and on motion of Dr. J. M. Baldy, Philadelphia, was duly accepted.

The following resolutions were introduced by Dr. J. M. Baldy, Philadelphia, and on motion referred to the Reference Committee on New Business:

Whereas, "United we stand, divided we fall," and "divided councils defeat their own ends," and

Whereas, The medical profession does not carry the influence in public matters, either state or communal, as is becoming such an important and numerous body, and

Whereas, Well coordinated action by the Committee on Public Policy and Legislation of the several county societies is practically a nullity for reason of lack of initiative of action, due to lack of central advice and assistance; therefore, be it

Resolved, That the Committee on Public Policy and Legislation of the Medical Society of the State of Pennsylvania be reorganized with the view to its becoming the central control through which similar committees of all county societies and individuals shall act in all matters pertaining to medical legislation and the enforcement of the medical laws of this commonwealth, and

Resolved, That in all proposed actions pertaining to these matters consultation must first be had with the Committee on Public Policy and Legislation of the Medical Society of the State of Pennsylvania and that the final advice of this committee shall be binding on said county society committees or individuals, members of the Medical Society of the State of Pennsylvania, and

Resolved, That a subcommittee of the Committee on Public Policy and Legislation of the Medical Society of the State of Pennsylvania be created, whose specific duty it shall be to organize the county society committees on Public Policy and Legislation (either as committees of the whole or through subcommittees) for the purpose of collecting evidence of illegal practice of the healing art in the several counties of this commonwealth and for the prosecution of any and all such offenders. That the said committee shall organize a compact coordination between itself as a controlling body and the several county society committees, and

Resolved, That the Board of Trustees of the Medical Society of the State of Pennsylvania is hereby requested to appropriate an additional sum of five hundred dollars, or so much thereof as may be necessary, to said committee for purposes of organization of the aforesaid subcommittee and its activities.

Dr. Henry D. Jump, Philadelphia, moved that in the absence of the Assistant Secretary the chair be authorized to appoint an acting assistant secretary. Motion was seconded and carried, and the chair appointed Dr. C. B. Longenecker, Philadelphia, as acting assistant secretary.

Dr. Wilmer Krusen, Philadelphia, moved that the House of Delegates send its greetings to Dr. Samuel G. Dixon, President Elect, and express its sympathy in his illness, and its hopes for his speedy recovery. Motion was seconded by Dr. J. M. Baldy, Philadelphia, and unanimously carried. The secretary was instructed to wire the same.

President Codman announced that members of the Medical Officers' Reserve Corps would be present during the session and prepared to examine any physician who might wish to apply for a commission.

Dr. Wilmer Krusen, Philadelphia, on behalf of the Philadelphia delegation, extended an invitation to the society to hold its next session in Philadelphia. A cordial invitation was also received from the Philadelphia Chamber of Commerce for our Society to meet in Philadelphia in 1918.

On motion the House adjourned at 4:25 p. m., to meet in the evening at 8:30.

Monday Evening, Sept. 24, 1917

The House of Delegates was called to order in the William Penn Hotel, at 8:40 p. m., by President Charles A. E. Codman, Philadelphia.

Roll call disclosed that there were fifty-two delegates and seven nonvoting members present.

The minutes of the afternoon meeting were read and approved.

Dr. William S. Wray, Philadelphia, proposed the following amendments to the Constitution and By-Laws, which were referred to the Committee on Society Comity and Policy with instructions to report their recommendations next year:

Amend Section 1, of Article IX, to read: "The officers of this Society shall be a President, four Vice-Presidents, a Secretary, an Assistant Secretary, a Treasurer, a Manager of Sessions and Exhibits, ten Trustees or Councilors, an Editor and as many Censors as there are component county societies."

Amend Section 1, of Chapter III, by changing the word "eighteen" in the second line to "nineteen." Change the twentieth line to read as follows: "First: Chester and Delaware." Add the words: "Nineteenth: Philadelphia." after the last line.

Amend Chapter III, Section 3, to read: "The state shall be divided into ten councilor districts, one of which shall consist of the County of Philadelphia. No member residing in any district having a resident Councilor shall be eligible for election as Councilor. The Councilor Districts shall be constituted as follows: . . ." Add after the last line the words: "Tenth: Philadelphia."

Make a new Section termed Section 4, as follows: "Section 4. In case a Councilor's district is composed of one county, said county shall have a Board of Censors consisting of three of its members elected as provided in Section 1 of this Chapter."

Dr. Henry D. Jump, Philadelphia, proposed as an amendment to the proposed amendment that Bucks County be transferred from the Third Councilor District, and from the Second Censorial District, to the proposed Tenth Councilor District, and Nineteenth Censorial District.

Dr. Edward B. Heckel, Pittsburgh, moved that the Committee on Society Comity and Policy be instructed by the House to consider these amendments in a very broad way, so as to reconstruct the Censorial Districts and the Councilor Districts, with a view to their adoption next year. The motion was seconded by Dr. I. J. Moyer, Pittsburgh, carried and the committee so instructed.

Dr. Wilmer Krusen, Philadelphia, chairman of the Reference Committee on Reports of Officers and Committees, reported for the committee as follows:

1. We recommend the adoption of the report of the Secretary and commendation for his faithful service.

2. The committee recommends the adoption of the supplemental report of the Trustees, feeling that each component county society can solve its individual problem of finances.

3. We recommend that the House of Delegates by election fill the places of those Trustees who are absent in the service of the United States.

4. We recommend the adoption of the reports of the individual Councilors.

5. We recommend the acceptance of the report of the Committee on Public Policy and Legislation, calling special attention to the need for better organization of the profession.

6. We recommend the adoption of the report of the Commission on Conservation of Vision and the report of the Committee on Promotion of Efficient Laws on Insanity.

7. We respectfully recommend that the Committee on Archives give a more elaborate report in future years.

8. We recommend the acceptance of the report of the Commission on Medical Expert Testimony and recommend the continuance of the commission.

9. We approve the recommendation of the Committee on Society Comity and Policy, and recommend the adoption of their recommendation of the amendment of Section 2, Article XI of the Constitution of the Society to read: "No one, however, shall be eligible to succeed himself after he has served two full consecutive terms."

10. We recommend the acceptance of the report of the Committee on Medical Benevolence.

11. We recommend the continuance of the Commission on Cancer and urge that the work of the Committee on Health and Public Instruction be extended and developed.

12. We recommend the adoption of the report of the Committee on Quarantine Service at the Port of Philadelphia.

Lewis H. Taylor,
H. W. Albertson,
Wilmer Krusen.

On motion of Dr. J. W. Ellenberger, Harrisburg, duly seconded, the House rereferred the ninth item in the report of the reference committee to the standing Committee on Society Comity and Policy, and adopted the other several items of the report.

On motion of Dr. Thomas R. Currie, Philadelphia, the House adjourned at 9:50 to meet at 4:30 p. m., Sept. 25, 1917.

C. A. E. Codman, President,
C. L. Stevens, Secretary.

Tuesday Afternoon, Sept. 25, 1917

The House of Delegates was called to order in the William Penn Hotel at 4:35 p. m., by the Fourth Vice President, Dr. Herbert B. Gibby, Wilkes-Barre.

On motion roll call was dispensed with as it was evident that more than a quorum were present.

The Minutes of the Monday evening meeting were read and approved.

Dr. George W. Wagoner, Johnstown, introduced the following resolutions, which were referred to the Reference Committee on New Business:

In order to provide a fund for the support and development of the Medical Society of the State of Pennsylvania and to advance the object for which the Society was organized, be it

Resolved, That an endowment fund shall be created out of any surplus revenues, gifts, profits and interest from investments which the Board of Trustees may in its discretion, set aside for that purpose.

Resolved, That the Board of Trustees as a body, or by committee, shall have authority to direct the manner in which any of the Society's funds shall be invested.

Resolved, That the Treasurer of the Society shall be the custodian of the endowment fund when so invested.

Resolved, That all investments shall be made in the name of the Medical Society of the State of Pennsylvania.

Resolved, That the endowment fund and its accumulations shall not be used for any purpose except by order of the House of Delegates in annual meeting assembled.

Dr. Wilmer Krusen, Philadelphia, moved the adoption of the following resolutions and the motion was seconded and unanimously carried:

Resolved, That in the death of Dr. William B. Ewing, Pittsburgh, the Medical Society of the State of Pennsylvania has lost an efficient and always willing worker, whose presence and service will be greatly missed.

Resolved, That these resolutions be spread upon the minutes of this convention in recognition of his personal qualities and his long record of good work, and a copy sent to the members of his family.

Dr. John D. McLean, Philadelphia, introduced the following resolutions, which were referred to the Reference Committee on New Business:

Whereas, The Medical Society of the State of Pennsylvania is deeply concerned in all that pertains to national efficiency and health conservation; and

Whereas, Venereal infections are among the most serious and disabling diseases to which not only the soldier and sailor, but men, women and children in civil life are liable; and

Whereas, They constitute a grave menace to success in the war in which we are engaged; and

Whereas, The Congress of the United States, the President, the Secretaries of War and Navy, the Council of National Defense and other governmental agencies have adopted a general policy for combating the venereal diseases; and

Whereas, A great responsibility rests upon the civil population and particularly upon the medical profession for participation in carrying out adequate measures for giving effect to the government's policy; therefore, be it

Resolved, That the Medical Society of the State of Pennsylvania pledges the support of its members to the following basis for a program of civil activities adopted by the American Medical Association:

1. That sexual continence is compatible with health and is the best prevention of venereal infections.
2. That steps be taken toward the eradication of venereal infections through the repression of prostitution, and by the provision of suitable recreational facilities, the control of alcoholic drinks, and other effective measures.
3. That plans be adopted for centralized control of venereal infections through special divisions of the proper public health and medical services.
4. That the hospitals and dispensaries be encouraged to increase their facilities for early treatment and follow-up service for venereal diseases as a measure of national efficiency.
5. That the members of the medical profession be urged to make every effort to promote public opinion in support of measures instituted in accordance with these principles of action in the control of venereal diseases. Be it further

Resolved, That the Commissioner of Health of Pennsylvania be requested to take such steps as may be necessary to secure the proper reporting of venereal diseases for the purpose of securing adequate advice and treatment for all infected persons and carriers. Be it also

Resolved, That the Bureau of Medical Education and Licensure of the State of Pennsylvania be requested to use all possible legal measures to secure the admission of persons afflicted with venereal diseases into the hospitals of the state. Be it

Resolved, That all measures proposed shall be in accord with policies of the government for the repression of prostitution and alcohol and the safeguarding of moral standards which society has decreed.

In adopting these resolutions the Medical Society of the State of Pennsylvania records its belief that it is now possible to place the venereal diseases on a scientific basis as dangerous infectious diseases which may be combated by health departments with the full cooperation of the medical profession and the public at large.

The Secretary presented the following recommendation of the Board of Trustees:

The Trustees recommend to the House of Delegates that they authorize the Trustees to appropriate $200, or so much thereof as may be needed, toward the traveling expenses of the President of the Society in the performance of his official duties.

Dr. John D. McLean, Philadelphia, chairman of the Reference Committee on New Business, reported that the committee recommended the adoption of the following resolutions: (1) The resolutions introduced at this meeting pledging the support of the government in the prevention of venereal diseases, and (2) the resolutions introduced by Dr. Baldy at the Monday afternoon meeting, regarding the work of the Committee on Public Policy and Legislation.

On motion of Dr. John D. McLean, Philadelphia, duly seconded, recommendation No. 1 of the reference committee was adopted.

On motion of Dr. Wilmer Krusen, Philadelphia, duly seconded, recommendation No. 2 of the reference committee was adopted.

Dr. Wilmer Krusen, Philadelphia, chairman of the Reference Committee on the Reports of Officers and Committees, reported as follows:

1. We commend to the Society the scholarly address of our President, and suggest that his recommendation be referred to the Bureau of Medical Education and Licensure for consideration as to the possibility of temporarily changing the requirements for entrance on the study of medicine.

2. We approve the recommendation of the Board

of Trustees that $200 be appropriated for the traveling expenses for the President in the official performance of his duties.

Wilmer Krusen,
Lewis H. Taylor,
H. W. Albertson.

On motion, duly seconded, both Recommendations 1 and 2 of the reference committee were adopted.

Dr. Lewis H. Taylor, Wilkes-Barre, chairman of the standing Committee on Society Comity and Policy, presented the following report, which was referred to the Reference Committee on Reports of Officers and Committees:

Your Committee on Society Comity and Policy, to whom the proposed amendment to Section 2 of Article IX of the Constitution was referred back for further consideration, again recommend the passage of the amendment but with the elimination of the clause "three of whom shall be elected annually" so that the sentence shall read: "The terms of the Trustees shall be three years. No Trustee, however, shall be eligible to succeed himself after he has served two full consecutive terms."

Lewis H. Taylor,
C. L. Stevens.

On motion the House adjourned at 5:30 p. m., until 9 a. m., Wednesday, September 26.

Herbert B. Gibby, Fourth Vice President.
C. L. Stevens, Secretary.

Wednesday Morning, Sept. 26, 1917

The House of Delegates was called to order in the William Penn Hotel at 9:20 a. m., by Dr. Herbert B. Gibby, Wilkes-Barre, Fourth Vice President.

The roll call showed that there were seventy-five delegates and seven nonvoting members present.

The minutes of the Tuesday afternoon meeting were read, corrected and approved.

The election of officers being the order of the day, the chairman appointed Drs. Joseph Scattergood, West Chester, and J. W. Ellenberger, Harrisburg, as inspectors, and the Secretary requested Dr. E. B. Heckel, Pittsburgh, to assist in keeping a duplicate tally.

Dr. F. L. Van Sickle, Olyphant, was placed in nomination for President Elect by Dr. Wilmer Krusen, Philadelphia. The nomination was seconded by several delegates, and on motion the nominations were ordered closed.

Drs. Walter F. Donaldson, Pittsburgh; B. Franklin Royer, Harrisburg; David N. Dennis, Erie, and Walter J. Leaman, Leaman Place, were nominated as First, Second, Third and Fourth Vice Presidents respectively.

Drs. Cyrus Lee Stevens, Athens; Christian B. Longenecker, Philadelphia, and George W. Wagoner, Johnstown, were nominated Secretary, Assistant Secretary and Treasurer, respectively. On motion of Dr. E. B. Heckel, Pittsburgh, seconded by Dr. Wilmer Krusen, Philadelphia, the Secretary was instructed to cast the ballot of the House for the above mentioned officers, there being but one nominee for each. The Secretary reported that the ballot had been cast for the above mentioned nominees and the chair declared them duly elected for the respective offices.

The resignations of the following Trustees were read and accepted: Dr. T. B. Appel, Second District, term expiring in 1919; Dr. William W. Lazarus, Sixth District, term expiring in 1919; and Dr. John B. Lowman, Fifth District, term expiring in 1918.

Drs. Wilmer Krusen, Philadelphia, and I. G. Shoemaker, Reading, were nominated as Trustees for the First District, to fill the vacancy caused by the expiration of the term of Dr. William T. Sharpless, West Chester, who had served two full terms. Dr. Krusen requested that his name be withdrawn and there being no further nominations, the Secretary was instructed to cast the ballot of the House. The Secretary reported that the ballot had been cast for Dr. Ira G. Shoemaker, Reading, and the chair declared him elected for the term ending in 1920.

Dr. Frank G. Hartman, Lancaster, was nominated as Trustee for the Second District to fill the unexpired term of Dr. T. B. Appel, resigned. There being but one candidate, the Secretary was instructed to cast the ballot of the House, which was done and the chair declared Dr. Frank G. Hartman elected Councilor of the Second District for the term ending in 1919.

Dr. H. W. Albertson, Scranton, was duly nominated and elected as Trustee for the Third District, in place of Dr. F. L. Van Sickle, whose term expired, and who had served two full terms.

Dr. Spencer M. Free, Dubois, was duly nominated and elected as Trustee for the Fifth District, to fill the unexpired term of Dr. John B. Lowman, resigned.

Dr. Donald Guthrie, Sayre, was duly nominated and elected as Trustee for the Sixth District, to fill the unexpired term of Dr. William W. Lazarus, resigned.

Dr. J. B. F. Wyant, Kittanning, was duly nominated and elected Trustee for the Ninth District, to succeed himself.

Drs. George G. Harman, Huntingdon; Herbert B. Gibby, Wilkes-Barre; Wilmer Krusen, Philadelphia; William F. Bacon, York; George R. S. Corson, Pottsville, were duly nominated and elected Delegates to the American Medical Association for two years.

Drs. J. W. Ellenberger, Harrisburg; Adolph Krebs, Pittsburgh; George E. Simpson, Indiana; Charles C. Cracraft, Claysville; Amos W. Colcord, Clairton; Eugene Elgin, East Berlin; William Rowland Davies, Scranton; Frank C. Hammond, Philadelphia; William T. Williams, Mt. Carmel; and Martha Tracy, Philadelphia, were duly nominated and elected alternates for two years. On motion of Dr. E. B. Heckel, Pittsburgh, the Secretary was instructed to arrange the ten alternates into two groups of alternates resignate and alternates at large, as per standing rule of the society.

On motion of Dr. Edward B. Heckel, Pittsburgh, the Secretary was instructed to cast the ballot of the House for District Censors, the county societies having sent the names of the nominees to the Secretary. (See page 141 for full list of officers and committees.)

On motion, duly seconded, Philadelphia was unanimously selected as the meeting place for 1918.

Dr. John B. McAlister, Harrisburg, read the following communication in regard to the Senior Military Medical Association, which on motion of Dr. E. B. Heckel, Pittsburgh, was referred to the Reference Committee on New Business:

This circular letter is intended to be a descriptive statement of and answer to the usual questions asked about the Senior Military Medical Association.

Our government is and will continue to be more in need of physicians than of any other class of men in the prosecution of the present war—a war for the maintaining of our established rights and liberties and our self-respect and the respect and honor due us by other nations.

Surgeon-General Gorgas called a representative committee of the older physicians to Washington for conference, and it was there arranged that an organization of the physicians past the age of 55 years (the age limit for admission to the Army and Navy Reserve Medical Corps) should be formed, and that it should also admit physicians under 55 years if they are kept at home by reason of teaching in medical schools or being unable to pass the severe medical examination required for admission to said Medical Corps.

The Senior Military Medical Association was then formed, and at a largely attended meeting the officers above named were elected.

The purpose of the Association is to serve the government by performing such medical work as the members are capable of, especially at or near the member's residence. Its members mostly can do only part-time work, but some are able to go from home and do full-time service. The arrangement will probably be a contract with the government to do special service, with a military grading. The pay will be according to the grading and work performed.

It is felt that the members of the Association can act as consultants in general and special physical conditions of recruits and conscripted men; also, in matters of sanitation and hygiene, and in making general physical examinations and mental and special examinations and in working in local hospitals or established places or cantonments where the sick or injured men may be sent; or those where fitness may be brought about in men medically rejected from admission to the service; also in performing any other work they may be capable of by the direction of the government.

No assurance can at present be given as to when service may be requested. Men may apply for admission to the S. M. M. A. by filling out the blank card which will be supplied on request to Dr. Alexis Dupont Smith, 5926 Greene St., Germantown, Philadelphia, and returning it properly filled out and one dollar, the annual dues made necessary to cover postage and incidental expenses.

For the present, residential limit of eligibility for membership includes Pennsylvania, New Jersey, Delaware and Maryland. When points remote from Philadelphia have organized units or branches of the S. M. M. A. membership may be transferred.

The membership now numbers several hundred, whose loyalty has impelled them to offer such service as they can perform for their country, now in the time of its need. Surely no slackers are they, when they might have been excused. Their country's honor their honor.

Answers to questions will be gladly made.

WM. DUFFIELD ROBINSON, Chairman.

Dr. Martha Tracy, Philadelphia, offered the following resolution, which was referred to the Reference Committee on New Business:

WHEREAS, The calling out of the medical men of this state to military service is already causing serious shortage in hospital and dispensary staffs, and

WHEREAS, Women physicians not yet subject to military draft are already in demand to fill these vacancies in far greater numbers than are available; be it

Resolved, That the members of the House of Delegates be instructed to carry to their several county societies the suggestion that the societies issue in their respective communities public appeals to college women who are educationally and temperamentally fitted for the study of medicine to take up this study at once that they may prepare themselves to enter the medical profession and thus aid in meeting the coming stress in caring for the sick in our civil population.

The following resolution, read by the Assistant Secretary, was, on motion of Dr. William T. Sharpless, West Chester, seconded by Dr. Wilmer Krusen, Philadelphia, adopted:

WHEREAS, The Bureau of Medical Education and Licensure, of which Dr. J. M. Baldy is chairman, has by its tact, perseverance and intelligent action succeeded in raising the standard of medical practice in the state, improved the condition of the hospitals, and done much to stamp out illegal practitioners of medicine; therefore be it

Resolved, That the House of Delegates wishes to express its appreciation of the good work of the Bureau and pledge to it its confidence and support.

Dr. Edward B. Heckel, Pittsburgh, stated that he had just learned of the death of Dr. Americus R. Allen, Carlisle, a prominent member of the Society and often a member of the House of Delegates, and moved that the chair appoint a committee of two to draw up appropriate resolutions on his death, the same to be spread on the minutes of the House and a copy of the same sent to the family. The motion was seconded and carried and the chair appointed Drs. John B. McAlister, Harrisburg, and Frank G. Hartman, Lancaster, as the committee.

Dr. Edward B. Heckel, Pittsburgh, moved that a committee of three be appointed, to be known as the Committee on Revision of the Constitution and By-Laws, to act in conjunction with the standing Committee on Society Comity and Policy, and that they revise the entire Constitution and By-Laws and present the result of their work for adoption to the House of Delegates at the next session, or to the Secretary of the Society for publication in the PENNSYLVANIA MEDICAL JOURNAL according to Article XIII of the Constitution. The motion, seconded by Dr. Charles A. E. Codman, Philadelphia, was carried, and the chair appointed Drs. Edward B. Heckel, William H. Cameron and Walter F. Donaldson, Pittsburgh, as this committee.

Dr. Wilmer Krusen, Philadelphia, presented the following resolution, which on motion was unanimously carried:

Resolved, That the House of Delegates offers a vote of thanks to the Committee on Arrangements and the medical profession of Allegheny County for the splendid hospitality extended to the Medical Society of the State of Pennsylvania during this session.

Dr. John D. McLean, Philadelphia, chairman of the Reference Committee on New Business, reported for the committee favorable action regarding the Senior Military Medical Association, and on motion the report of the reference committee was adopted and the Senior Military Medical Association was approved.

The following resolution was read and on motion of Dr. J. M. Baldy, Philadelphia, was laid on the table:

WHEREAS, The question which now most concerns the world is the character and permanency of the peace to follow the present war, and

WHEREAS, In this no class of men has a more direct interest than the medical profession because it is devoted to the prevention and relief of human suffering of which war is the most prolific cause, and because no profession is called upon to make greater sacrifices in and by reason of war, than ours, and

WHEREAS, In this time of national trial, emergency and stress the President has said,—in his proclamation to the people issued April 15, 1917: "The hope of the world is that when the European war is over arrangements will have been made composing many of the questions which have hitherto seemed to require the arming of the nations, and that in some ordered and just way the peace of the world may be maintained by such cooperation of force among the great nations as may be necessary to maintain peace and freedom throughout the world," and

WHEREAS, The League to Enforce Peace, organized at Philadelphia in Independence Hall in June, 1915, has for its cardinal principle the promotion of a League of Nations, after the close of the present war, the object of which shall be to maintain and enforce in the future peace based on justice,

Resolved, That the Medical Society of the State of Pennsylvanian endorses the principles and program advocated by the League to Enforce Peace, and urges their adoption and support by all good and patriotic citizens of our state and country.

The Reference Committee on Reports of Officers and Committees through its chairman, Dr. Wilmer Krusen, Philadelphia, recommended the adoption of the amendment to Section 2 of Article IX of the Constitution as follows: "The terms of the Trustees shall be three years. No Trustee, however, shall be eligible to succeed himself after he has served two full consecutive terms." The recommendation of the reference committee was on motion adopted and the constitution accordingly amended.

The Reference Committee on New Business recommended the adoption of the resolution introduced at this meeting of the House by Dr. Martha Tracy, and on motion the resolution was adopted.

The following resolutions were read and referred to the Reference Committee on New Business:

WHEREAS, This country and its allies are prosecuting a great war for world democracy, and

WHEREAS, Many of the members of the Medical Society of the State of Pennsylvania have entered the military service of the government, be it

Resolved, That it is the sense of this Society that all physicians of our state remaining at home should put forth their best individual and collective efforts to maintain the activities of our medical societies, medical schools and hospitals as well as all other professional interests, as nearly as possible at the normal level while the great struggle endures.

Resolved, That the stay-at-home physicians should be more than willing to fill any or all gaps in private practice and institutional work, caused by the absence of colleagues who are serving under the colors.

Resolved, That physicians at home should take active, concerted steps looking to the execution of reconstructive work, especially among the rejected applicants for military service, and those who have become ill or have been wounded while engaged in the service of the government.

Resolved, That the chairman appoint a "Joint Reconstruction Committee," of seven members selected from the members of the Pennsylvania State Committee, Medical Section Council of National Defense, and representing the most populous centers of the state; this committee should cooperate and keep in touch with local committees working along the lines indicated in the above resolutions, besides keeping every section of the state informed of the work being done in all other parts of the state.

On motion, the House adjourned at 11:55 to meet again at 4:30 p. m.

Herbert B. Gibby, Fourth Vice President.
C. L. Stevens, Secretary.

Wednesday Afternoon, Sept. 26, 1917

The House of Delegates was called to order in the William Penn Hotel at 4:45 p. m., by Dr. Herbert B. Gibby, Wilkes-Barre, Fourth Vice President.

The Secretary announced a quorum present, and on motion the roll call was dispensed with.

The Reference Committee on New Business, through its chairman, Dr. John D. McLean, reported recommending the adoption of the resolution introduced by Treasurer Wagoner, regulating the Endowment Fund. On motion the recommendation of the committee was adopted.

The Reference Committee on New Business, through its chairman, Dr. John D. McLean, reported, recommending the adoption of the resolutions authorizing the appointment of a Joint Reconstruction Committee, as introduced at the morning session. On motion the resolutions were adopted as recommended by the reference committee, and the chair was instructed to appoint this committee consisting of seven members from the State Committee, Medical Section Council of National Defense. Chairman Gibby later announced the committee as follows:

Drs. F. L. Van Sickle, chairman, Olyphant; C. L. Stevens, Athens; John A. Lichty, Pittsburgh; B. F. Royer, Harrisburg; Charles H. Frazier, Richard H. Harte, J. M. Baldy, Philadelphia.

The Secretary presented for the Auditing Committee of the Board of Trustees the report of Main, Squires and Company, Certified Public Accountants, as follows, for publication in the minutes of the House of Delegates:

Pittsburgh, Sept. 26, 1917.

Medical Society of the State of Pennsylvania,
William Penn Hotel,
Pittsburgh.

Gentlemen:

Pursuant to your instructions, we have audited the books, records and accounts of the Medical Society of the State of Pennsylvania for the period from Sept. 1, 1916, to Sept. 1, 1917, including the treasurer's cashbook, the secretary's journal, and the cancelled checks and vouchers supporting the same.

All recorded receipts as shown by the secretary's journal were turned over to the treasurer as evidenced by secretary's checks payable to Dr. George W. Wagoner, Treasurer.

The various bank pass books were submitted to us for verification and were found to be in agreement with the various cash accounts. The balance in the general fund was verified by a written certificate of the United States National Bank, Johnstown, Pa.

All expenditure vouchers were approved by your president, Dr. Charles A. E. Codman, and by your secretary, Dr. C. L. Stevens. All securities representing your invested funds were submitted to us for verification, and were found to be in agreement with the various accounts representing such investments. The investment in Liberty Bonds was supported by a certificate of deposit.

In order that the results of your operations for the period of our audit may be clearly set forth for your consideration, and in order that the present financial status of your Society may be exhibited for your inspection, we are submitting herewith, as a part of our report, the following schedules:

Schedule "A"	Summary Statement of Cash Balances, Receipts and Disbursements, Sept. 1, 1916, to Sept. 1, 1917, Inclusive.
Schedule "B"	County Analysis of Receipts, Sept. 1, 1916, to Sept. 1, 1917.
Schedule "C"	Classified Statement of Disbursements, Sept. 1, 1916, to Sept. 1, 1917, Inclusive.
Schedule "D"	Statement of Cash Balances and Investments, Sept. 1, 1917.

During the course of our audit every courtesy was extended us by the officers of your Society.

Respectfully submitted,
(Signed) Main, Squires & Co.,
Certified Public Accountants.

SCHEDULE "A"

Summary Statement of Cash Balances, Receipts and Disbursements

Sept. 1, 1916, to Sept. 1, 1917, Inclusive

	Total	General Fund	Medical Benevolence Fund	Medical Defense Fund
Cash Balance, Sept. 1, 1916	$15,713.16	$10,999.91	$3,102.92	$1,610.33
Receipts—				
Dues, various counties (Schedule "B")	19,112.50	19,112.50		
Membership per Capita Tax	5,865.90	....	693.40	5,172.50
Interest on Investments	405.00	....	292.50	112.50
Interest on Bank Balances	153.56	....	107.32	46.24
Organization Work	24.00	24.00	....	....
Interest on Liberty Bonds	6.14	6.14	....	....
Total Receipts, Sept. 1, 1916, to Sept. 1, 1917	$25,567.10	$19,142.64	$1,093.22	$5,331.24
Transfers of Funds	....	†3,811.94	*602.36	*3,209.58
	$25,567.10	$22,954.58	$ 490.86	$2,121.66
Total Balance and Receipts	41,280.26	33,954.49	3,593.78	3,731.99
Disbursements—				
Total as per Schedule "C"	26,256.56	26,256.56	....	....
Balances Sept. 1, 1917	$15,023.70	$ 7,697.93	$3,593.78	$3,731.99

SCHEDULE "B"

County Analysis of Receipts

Sept. 1, 1916, to Sept. 1, 1917

Allegheny	$ 2,959.00
Armstrong	170.50
Adams	68.75
Blair	247.50
Butler	162.25
Bucks	231.00
Beaver	181.50
Bradford	134.75
Berks	310.75
Bedford	71.50
Chester	239.25
Cumberland	115.50

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* Transferred from.
† Transferred to.

Columbia	118.25
Clearfield	187.00
Cambria	308.00
Crawford	140.25
Clarion	93.50
Clinton	68.75
Center	85.25
Carbon	85.25
Delaware	244.75
Dauphin	445.50
Erie	319.00
Elk	57.75
Franklin	145.75
Fayette	335.50
Greene	57.75
Huntingdon	99.00
Jefferson	167.75
Juniata	30.25
Indiana	167.75
Lackawanna	533.50
Lebanon	88.00
Luzerne	503.25
Lawrence	209.00
Lehigh	275.00
Lancaster	371.25
Lycoming	277.75
Monroe	60.50
Montgomery	376.75
Mercer	192.50
Montour	57.75
Mifflin	82.50
McKean	129.25
Northampton	346.50
Northumberland	176.00
Philadelphia	5,087.50
Perry	57.75
Potter	60.50
Schuylkill	294.25
Somerset	115.50
Sullivan	27.50
Susquehanna	35.75
Snyder	68.75
Tioga	99.00
Union	44.00
Venango	156.75
Wyoming	44.00
Westmoreland	418.00
Washington	319.00
Warren	112.75
Wayne	90.75
York	352.00
Total Receipts from Dues, Sept. 1, 1916, to Sept. 1, 1917	$19,112.50

SCHEDULE "C"

Classified Statement of Disbursements

Sept. 1, 1916, to Sept. 1, 1917, Inclusive

Medical Defense Funds	$ 9,075.48
Medical Benevolence Funds	376.55
Endowment Fund	900.00
Interest on Medical Benevolence Fund	225.81
Expense, Bond of Secretary	2.50
Expense, Bond of Treasurer	12.50
Expenses, Scranton Session	425.05
Expenses, Secretaries' Conference	32.34
Expenses, Committee on Scientific Work	250.91
Expenses, Representing House of Delegates	75.00
Expenses, Committee on Public Policy and Legislation	209.91
Expenses, Organization Work	100.00
Expenses of Secretary	25.29
Expenses of Councilors	77.08
Expenses of Committee on Cancer	26.75
Expenses, Publishing Journal, 8⅓ cents per monthly membership	6,902.07
Salary of Manager	250.00
Salary of Secretary	1,500.00
Salary of Treasurer	200.00
Printing, postage and stationary	454.32
Auditing	10.00
Retainer Fee	100.00
Purchase of Gavel	25.00
Purchase of Liberty Bonds	5,000.00
Total Disbursements, Sept. 1, 1916, to Sept. 1, 1917, Inclusive	$26,256.56

SCHEDULE "D"

Statement of Cash Balances and Investments

Sept. 1, 1917

Cash—		
General Fund	$7,697.93	
Medical Benevolence Fund	3,593.78	
Medical Defense Fund	3,731.99	
		$15,023.70
Endowment Fund—		
100 Shares, Peoples Building and Loan Association, 9 Installments Paid		900.00
Medical Defense Fund—		
Wilkes-Barre City Improvement Bonds, Nos. 96, 97 and 98, Series 1, Par $1,000—4½ per cent.		3,000.00
Medical Benevolence Fund—		
P. R. R. General Freight Equipment Trust Certificates, Nos. 531, 532, 533, 534, and 535, Series 1, Par $1,000—4½ per cent.	5,000.00	
Wilkes-Barre City Improvement Bond, No. 94, Series 1, Par $1,000—4½ per cent.	1,000.00	
		$ 6,000.00
Liberty Bonds		5,000.00
Total Cash Balances and Investments Sept. 1, 1917		$29,923.70

On motion the House of Delegates of the Sixty-Seventh annual session of the Medical Society of the State of Pennsylvania adjourned sine die at 5:25 p. m.

Herbert B. Gibby, Fourth Vice President.
C. L. Stevens, Secretary.

MINUTES OF THE GENERAL MEETINGS

Tuesday Morning, Sept. 25, 1917

The sixty-seventh annual session of the Medical Society of the State of Pennsylvania was called to order in General Meeting at 10:15 a. m., Tuesday, September 25, in the Ball Room of the William Penn Hotel, Pittsburgh, by the President, Dr. Charles A. E. Codman, Philadelphia.

Prayer

BY REV. DR. E. JEFFREY JENNINGS OF THE CHURCH OF THE ASCENSION, PITTSBURGH

Let us all bow our heads. O Heavenly Father, we Thy children, come to Thee this morning in prayer. We thank Thee, O Father, that thou hast called us together in this Sixty-Seventh Annual Convention, and Father, we ask Thee that Thy divine wisdom will guide this convention. O Father, fill the hearts of those who are attending this convention with Thy love and with Thy knowledge; and O Father, direct them in all their consultations, in all their thoughts and in all their actions, and help them to understand Thee better, and help them to understand that wonderful piece of mechanism, that human machine which Thou has perfected. Help them, O Father, to understand this machine, in order that they may be able to help suffering humanity throughout this great universe. O Father, we thank Thee that Thou hast given us such men, men who are willing to give their lives to study the sufferings of humanity; and Father, we thank Thee that Thou hast perfected science so that the ills and pains of humanity are lightened, and happiness thereby is brought to Thy children throughout the world.

And, O Father, at this time we also want to pray for our country, our United States of America. Father, we ask thee that the men here may be filled with wisdom so to direct our country in its ways that we may progress as Thou woulds't have us progress; and Father, we also ask Thee to look on the great army and navy of our country, and to guide and direct it, and to help these men here so to think out plans for the future that the army and navy of this country and the countries of the allies shall be so powerful for Thee that they may bring about for us and for them Thy great victory. And, O Father, we pray for the soldiers and sailors in our army and navy. We ask Thee to make them strong so that they may fight our battles for us; and Father, we pray for the angels of mercy, the nurses who are administering to the sick and the dying. We pray Thee to give them strength and comfort, and help them to help those who are suffering. And, Father, we ask Thee to pour Thy blessings down on the men who have given up so much; given up large practices and families to go out into this world on the battlefield, and to help the men who are giving up their lives for our country and for the cause. And, O Father, we ask Thee to give the men of this nation and the men of the allies power and strength to overcome that great will to power which we are trying to fight against with the will to love. O Father, give us strength, give us strength to put down that will to power which would make of us slaves, and help us to bring about in this great world that will to love, and make of this world a fit place for equity, truth and justice; a home of freedom for the world. And, O Father, those who are giving their lives on the battlefield today—O Father, in the words of our great hero, Abraham Lincoln, may those men not have died in vain.

All of this we ask, O Father, that Thou wilt bring about Thy great kingdom of love here on earth. We ask it in the name of Thy son our Lord and Saviour Jesus Christ, who taught us to pray: Our Father who art in Heaven, hallowed be Thy name, Thy kingdom come, Thy will be done on earth as it is in Heaven. Give us this day our daily bread, and forgive us our trespasses as we forgive those who trespass against us; and lead us not into temptation, but deliver us from evil, for Thine is the kingdom and the power and the glory forever and ever, Amen.

The peace of God, which passeth all understanding keep your hearts and minds with the knowledge and love of God and of his son Jesus Christ our Lord, and may the blessing of God Almighty, the Father, Son and Holy Ghost be among you and remain with you always.

Address of Welcome

BY DR. JOHN M. THORNE, PRESIDENT OF THE ALLEGHENY COUNTY MEDICAL SOCIETY

Mr. President, Officers and Fellow Members: It becomes my privilege and pleasure to extend to you a hearty welcome on behalf of the Allegheny County Medical Society. The occasion of your visit to us every few years has always been anticipated with pleasure. It has been an inspiration to us for better work and for closer fellowship. On this occasion you are doubly welcome, for in these troubled times there is much need for concerted action in meeting the demands of war. Our welcome is none the less sincere because our program committee has seen fit to omit all of the social features which usually give much pleasure to our members on these occasions. I am sure that the tragedies of war have made more serious the hearts and minds of all of you so that you will not mind giving up the annual ball and other features; but, with the characteristic sacrificing and patriotic spirit of the profession, you will welcome our efforts to have you spend each evening in being entertained and instructed in matters pertaining to the war.

You know that most of our really big men have enlisted. Many more should enlist, for their services are sorely needed. It is our desire to give you a vision of the spirit of the times. Tonight we shall show you war movies. Tomorrow night we shall show you a pageant depicting the spirit of the different war periods from 1776 to the present time. We know that you will be interested. In a recent sermon our friend, the Rev. Dr. Brown, said that the leaders in the affairs of this nation in the next decade will be the returned heroes of this war. They are to be the leaders in the moral and spiritual thought of the times as well as in business and politics. To those who have risked life and braved death will be given a broader view of life, and their viewpoint will be recognized as one of higher standard than that of any of us of lesser fortitude and experience. The reward, therefore, of those who survive will justly be immediate and an earthly one. The reward of those who perish will be even greater for their devotion and sacrifice to the noble principles for which this nation is at war.

We trust that you will profit from the excellent scientific program and that you will so enjoy your visit that you will be quite ready to come again.

All Pittsburgh welcomes you to her hospitality. We welcome you to our city, and to its environmental characteristics; its high hills and deep valleys, and its miles of water front teeming with great industries; its smoke and grime; its noise and bustle; its throbbing mills and dusky mines; and its great populace from all climes. Note the air we breathe, possibly a little richer in food value on account of the excess of hydrocarbons in the shape of humidity and soot, and antiseptic on account of a dash of sulphur. If you stay long enough with us, you may have your bronchial mucous membrane coated with an asphalt-tar lining, which is said to make difficult the activities of the tubercle bacillus. You are welcome, fellows, to all that you can get out of the air. Note our pure clean water, long noted as a culture medium for the typhoid bacillus. Now, thanks to our filtration plant, as pure as any city supply can be. You are welcome, gentlemen, to all the water that you can drink. It is also good for bathing purposes. You will not be with us long before you will appreciate its usefulness.

We commend to you our many manufacturing industries; steel, iron, wire, nail, nut and bolt mills; factories for wood, cork and glasswares for bottles, tumblers, pickles, beer and whisky. Though you are welcome to all of these, beware of mixed drinks. It is so easy to become a tumbler after drinking out of a tall glass; so easy to get pickled after drinking from a long bottle; so likely to get pinched for being a nut, that it behooves one to have a care in patronizing our varied industries. You are welcome to our parks and highways, to our technical schools and universities, to our libraries and museums, to our hospitals and dispensaries, to our homes and firesides, and to all the hospitality that a generous people can give; and you will always be welcome.

Presentation of Program

BY DR. HENRY D. JUMP, PHILADELPHIA, CHAIRMAN OF COMMITTEE ON SCIENTIFIC WORK

Mr. President, Ladies and Gentlemen: The program as prepared by the committee is in your hands. Its preparation was conducted under unusual difficulties during this year, and had it not been for the energetic, assiduous and continuous attention given to it by members of the committee it would not be as good as it is. I trust it will be edifying and instructive. Many of the members who have been on the program have been called away to military or naval service, and will not be able to take their places. In some instances, however, their papers will be read for them, and we trust that the program will not be too much marred by these absences.

Announcement of Entertainments

BY DR. H. C. WESTERVELT OF THE ALLEGHENY COUNTY MEDICAL SOCIETY

Mr. Chairman, Ladies and Gentlemen: I want to preface the report of the Committee on Arrangements with an expression of regret concerning the absence of two rather notable figures from this convention, Dr. W. F. Donaldson, who was the acting chairman of this committee, in fact, the actual vice chairman. He is so ill that it is utterly impossible for him to be here to attend this meeting, and it will be impossible for him to be at any of the meetings of this convention. He sends expressions of regret and his best wishes for you all and for the success of this convention.

It is with feelings considerably deeper than of mere regret that I speak of the absence of Dr. William B. Ewing, the real chairman of the Committee on Arrangements, who died just a few weeks ago. He was probably one of the best known men in the State Society, and for many years was one of the most active workers. I say a feeling deeper than regret, because we all have that feeling for "Big Bill" Ewing that precludes such a perfunctory feeling as that of mere regret. I venture to say that none of you had known him so long as I. We were boys together, and my first recollection of Bill Ewing as a big, carefree, happy, innocent boy of 9 or 10 never left me, and in all his doings he was a boy still; whether he was doing right or wrong, he was doing it with that innocent big-boy way with which Bill Ewing did everything. It seems to me, inasmuch as he was the actual chairman of this committee and many of the plans which he had thought out will be carried out in this convention, that it would be most fitting that at the proper time some expression be put into the form of a resolution and be spread on the official minutes of this body.

The committee of course in its arrangements had included as one of the features the usual reception to the president. Because of the illness of Dr. Dixon that has been cancelled. The absence of members from outside, the members of the American Medical Association and other invited guests, who were to speak at the Tuesday night meeting, also necessitates changes.

There will be something doing each night. In all of these meetings, except the one tonight, the ladies are invited. The only reason that they are not invited tonight is because of what we hope will be the exceeding popularity of this meeting, and we want to crowd this room, floor and galleries, every seat in it, with men. That is the only reason that the ladies are not invited tonight. Certain reels of moving pictures will be released tonight, and shown for the first time in this room. There will also be good music, and good short, snappy talks, which I do not believe any man can afford to miss. Seats will be reserved until 8:15.

Tomorrow evening, remembering that the reception to the president has been cancelled, the meeting will begin at 8 o'clock. Seats will be reserved until 8:20. The music will be both vocal and instrumental. We have a real military band, one that saw service all through the times on the Mexican border. Dr. Thorne will deliver what he says will be a short address, which I assure you will be a very good one. Dr. Franklin Martin of the Advisory Commission of the Council of National Defense; Dr. Vaughan, an ex-president of the American Medical Association, known to all of us I am sure; Dr. Henry Sturgis Drinker, president of Lehigh University and chairman of the Pennsylvania branch of the League to Enforce Peace, will speak. We will have also a very well known ex-Congressman, who I am sure will make the eagle scream to suit all of us. Make no mistake about this League to Enforce Peace. If you have the least notion that it is a pacifist organization, disabuse your mind of it. I am given to understand that it is the method of peace which ensues after smashing the enemy, the peace that is the result of overwhelming victory, so I think we should hear what Dr. Drinker has to say. In addition to all this, we will have the patriotic pageant, which the committee feels well justified in assuring you will be well worth your time and attention.

Thursday evening, Prof. Graham Lusk of Cornell University, professor of physiological chemistry, will speak on the Food Problems of This Country. The clinic Thursday afternoon will be held, and any of you who have not seen or heard the details concerning the Carrel-Dakin method of treating open wounds will be well repaid for a visit to West Penn Hospital to see this demonstrated. You are also cordially invited, even urged, to attend the routine dressings at the hospital in the mornings as announced in the program.

SECRETARY C. L. STEVENS, Athens: *Mr. President:* Dr. Van Sickle, chairman of the Board of Trustees, has a little item of business that he would like to attend to at this time.

DR. F. L. VAN SICKLE, Olyphant: *Major Codman, President of the Medical Society of the State of Pennsylvania, Ladies and Gentlemen, Fellow Members:* I have a very delightful, easy and pleasant duty to perform this morning as acting chairman of the Board of Trustees. We feel that times are making rapid changes in all of us, and since you became the President of this Society, changes have occurred to you. You have entered the service as one who is going to the great war for our country. You have served well with us, and we know you will serve well there, and inasmuch as the work that you have done during the past year as President of this great organization should merit some slight token of affection, this State Society sees fit to present you with what is known not as a weapon of defense but as a weapon of construction, something with which you can guide your fellow members in the affairs of our Association, and therefore in these few words I desire to present you, in the name of the Medical Society of the State of Pennsylvania, with this gavel. We trust that you will keep it in remembrance of your fellow workers, of those with and for whom you have served; and may you in all your walks of life have the prosperity and the happiness which we trust you have had during the incumbency of your office as President of this Society.

PRESIDENT CODMAN: *Dr. Van Sickle, Fellow Members of This Society:* I certainly appreciate the kindly spirit which is part of this remembrance. Whatever has been accomplished has not been the work of any man, but the work of the team, of a body of men who are acting concertedly. I shall ever keep this and use it as an inspiration of what you have done for me.

It gives me great pleasure to present Dr. F. H. Barnes of Stamford, Conn., who has been duly appointed a delegate to represent his society at the annual session of this Society.

DR. BARNES: *Mr. President, Ladies and Gentlemen:* It is a great pleasure to me to represent the Connecticut State Medical Society at this meeting, and I bring you greetings from that body. It is a new policy with us to attend the meetings of the medical societies of our sister states. We trust that your Society will send a delegate next spring to the May meeting of the Connecticut State Medical Society, and I can assure you that he will receive a warm reception.

DR. C. A. E. CODMAN, Philadelphia: *Fellow Members of the Profession:* In retiring from the office of President, I wish to express my appreciation of the honor conferred on me by my fellow practitioners. When introduced to the office I promised to give the best that was in me, and to your judgment I leave the decision as to the fulfilment of the trust.

The first effort made was to place the Society on a firm financial basis. This was accomplished by the favorable action of the House of Delegates and the adoption by the Trustees of a suitable plan. As a result we now have an endowment fund well started by the purchase of $5,000 worth of Liberty Bonds and the investment of $1,200 yearly in a splendid building and loan association. In a few short years we will be assured of sufficient funds, the interest from which will help maintain the Society and place and keep it as the leading State Society of the United States. The formation of the Legislative Conference of the Medical Profession of Pennsylvania, composed of the members of the eclectic, homeopathic and regular schools, was the culmination of efforts of many years. The Committee on Public Policy and Legislation was largely instrumental in the creation of this conference. The appointment of a Committee on Archives insures the collection of the early history of the Society and its preservation for future generations. The adoption of one official letter head for the entire organization proved that it was both feasible and desirable. The formation of a new Section on Pediatrics gives a broader field for intensive study in this branch of our work. The progress made by the Society has not been the work of any one individual but rather the success attendant on the endeavors of all working as a unit. The loyal spirit of the Medical Society of the State of Pennsylvania is shown by results.

Only one short year has elapsed since we were all but slightly interested in the subject of medical preparedness. Since our last meeting tremendous changes have occurred in the lives of many of our members. Our country is at war. Our brethren have left their families and homes and have turned their backs on the personal comforts to do the work of mercy on the battlefield. Many familiar faces are missing from this gathering. Almost one third of the total membership of our Society has responded to the first call of the colors and are serving abroad or preparing at training camps at home for duty in the army or navy. We can all point with just pride to the fact that Pennsylvania at the present time has contributed proportionately more medical men than any other state in the Union. This exalted position has been attained by the voluntary action of our brothers in the profession. More physicians are needed by our armed forces and Pennsylvania medical men will respond and help keep our state where she rightfully belongs. Patriotism, sacrifice, duty and honor are one and inseparable with the physician. The eyes of the entire world are on the American doctor and this is his opportunity to prove his worth. Medical history is being written every day and every one of us should do his portion to make the record honorable.

In closing, I wish again to thank you all for your consideration and kindness which you have so generously given to me during my term of office. Unfortunately for us, death, illness, and the entering of many of our men into the service of their country has caused great changes in this organization. This is the time when the President Elect should be installed, but unfortunately he is ill. In his absence he has requested a former president of the Society to read his introductory remarks. In a letter which I saw, which had been sent by Dr. Dixon, he stated that of all the honors he had received during his life time he felt that the highest was that conferred by the profession of Pennsylvania when it made him the President of this Society.

I will now call on Dr. John B. McAlister of Harrisburg to read the Address of President Samuel G. Dixon.

Dr. McAlister: *Mr. President, Members of the Medical Society of the State of Pennsylvania, Ladies and Gentlemen:* No one regrets more than I the absence of the distinguished gentleman who succeeds our efficient and popular retiring president; and while I am flattered at his request to read his address, I am embarrassed to stand even these few minutes in his place.

The President's Address by Dr. Samuel G. Dixon, Harrisburg, was read by Dr. McAlister (see page 1, October Journal).

President Codman: The Address of the President will be referred to the Reference Committee on the Reports of Officers and Committees, and will then be printed in The Journal.

The Surgeon-General has sent a special detail to attend this meeting and examine all who wish to apply for commissions in the Medical Officers' Reserve Corps. Parlor B on this floor will be occupied by these men, and any who wish to come will be examined.

H. J. Heinz Company invites the ladies to visit their factory.

The program of presiding officers, as agreed on, will be as follows: The First Vice President, Dr. John B. Corser, is at present in the National Army; the Second Vice President, Dr. Joseph W. Albright, Muncy, will preside over the General Meeting today and tomorrow; the Third Vice President, Dr. J. Treichler Butz, Allentown, will preside Thursday afternoon; the Fourth Vice President, Dr. Herbert B. Gibby, Wilkes-Barre, will preside over the meetings of the House of Delegates. It gives me great pleasure to present the presiding officer, Dr. Albright of Muncy.

Dr. Albright: *Ladies and Gentlemen:* I wish to request that all readers of papers take no longer than the allotted time, ten minutes, and that there will be no motions to ask the reader to take longer. Also as to discussions, we wish them not to take longer than five minutes. In that way we will get through.

"The Present Status of Drugless Therapeutics in the State of Pennsylvania," was read by Dr. J. M. Baldy, Philadelphia. On motion of Dr. Edward B. Heckel, Pittsburgh, duly seconded and carried, Dr. Baldy's paper was given to the Reference Committee on New Business to be later returned to the Secretary for publication in the Journal.

Dr. D. H. Strickland of Erie County: I would like to make an explanation in regard to the man Clapper from Erie County, referred to in Dr. Baldy's paper. He was arrested by his own class for having practiced medicine without a license. He was convicted in court. Between the time that his trial was set and the time of his arrest he appeared before the Bureau of Education and Licensure, and was granted a license. He came back and his trial was ignored by the judge, as reported in Dr. Baldy's paper. Possibly the granting of the license had a great influence with the decision of the judge. Six months after that, after he returned and commenced to practice medicine, a young married lady with two children from 6 to 9 years of age, went into his office to be relieved of her condition. He gave her an injection, according to reports, I do not know whether it was subcutaneously or by vagina, but in ten days she was dead in the hospital. The coroner held an investigation but I never could get any satisfaction as to the cause of death. She made a statement before she died, but unfortunately a statement unless sworn to in the state of Pennsylvania is good for nothing. I tried to get a copy of that paper so that I could furnish it to Dr. Baldy and the parties who attended her. I have never yet succeeded in getting any clue as to the statement she made. This is the condition that has been going on in this state for the past ten years.

"Alcoholism; Some Complications and Their Treatment" was read by Dr. Joseph C. Doane, Philadelphia.

"Some Beneficial Results of School Medical Inspection" was read by Dr. William W. McFarland, Pittsburgh.

The meeting adjourned at 12:25 until Wednesday, September 26, at 9 a. m.

Joseph W. Albright, Second Vice President,
Cyrus Lee Stevens, Secretary.

Wednesday Morning, Sept. 26, 1917

The meeting was called to order by the Second Vice President, Dr. Joseph W. Albright, Muncy, at 9:15 a. m.

"Axis-Traction Obstetric Forceps" was demonstrated by Dr. Elmer L. Meyers, Wilkes-Barre.

In the symposium on Arthritis, the first paper, "General Considerations and Classifications," by Dr. Lawrence Litchfield, Pittsburgh, was read by Dr. Joseph H. Barach, Pittsburgh.

"Metabolism and the Treatment of Arthritis" by Dr. Ralph Pemberton, Philadelphia, was read by Dr. Barach.

"Diagnosis of Focal Sepsis" was read by Dr. Judson Daland, Philadelphia.

"Roentgen-Ray Examination" by Dr. William S. Newcomet, Philadelphia, was read by title.

The Symposium on Arthritis was discussed by Drs. Joseph H. Barach, C. B. McAboy, J. J. Rectenwald, Pittsburgh; E. R. Whitmore, Washington, D. C.; Ernest Laplace, Philadelphia; and closed by Dr. Daland.

"Dysentery and Its Relation to Camp Life" was read by Lieut.-Col. E. R. Whitmore, U. S. Army, Washington, D. C., and discussed by Drs. Victor C. Vaughan, Ann Arbor, Mich.; C. C. Mechling, Pittsburgh, and closed by Colonel Whitmore.

Meeting adjourned at 12 o'clock until Thursday, September 27, at 2 p. m.

Joseph W. Albright, Second Vice President,
Cyrus Lee Stevens, Secretary.

Thursday Afternoon, Sept. 27, 1917

The meeting was called to order by the Fourth Vice President, Dr. Herbert B. Gibby, Wilkes-Barre, at 2 p. m.

"Latent Pulmonary Tuberculosis in Its Various Disguises" was read by Dr. Myer Solis-Cohen, Philadelphia, and discussed by Drs. Sidney J. Slater, Oil City, and closed by Dr. Cohen.

In the Symposium on Equilibrium in Its Relation to Military and Civil Disability, the first paper, "The Function and Apparatus of Equilibration," was read by Dr. B. Alexander Randall, Philadelphia, and illustrated with moving pictures.

"Medical Aspects of Aviation," by Dr. Isaac H. Jones, Philadelphia, was not read, the author being on government service in the West.

"Clinical Studies of Vertigo" was read by Dr. Lewis Fisher, Philadelphia, and illustrated by moving pictures.

The papers of Drs. Randall and Fisher were discussed by Drs. George W. Stimson, Pittsburgh; J. N. Ingersoll, Rochester, N. Y., and closed by Dr. Randall.

It was announced that the appointments of Committees by President Dixon would be made through the Journal (see list of Officers and Committees on another page).

Society in General Meeting adjourned at 4:15 p. m.

Herbert B. Gibby, Fourth Vice President,
Cyrus Lee Stevens, Secretary.

MINUTES OF THE SECTION ON MEDICINE

Tuesday Afternoon, Sept. 25, 1917

The Section on Medicine convened in the William Penn Hotel, Pittsburgh, Sept. 25, 1917, and was called to order at 2 p. m. by the chairman, Dr. David Riesman, Philadelphia.

The chairman's address was delivered by Dr. Riesman.

"A Critical Study of the Treatment of Gastric Ulcer Based on Experimental Studies" was read by Dr. Martin E. Rehfuss, Philadelphia, and discussed by Drs. C. R. Jones, Pittsburgh; Thomas R. Currie, Judson Daland, Philadelphia, and closed by Dr. Rehfuss.

"The Social and General Management of Gastro-Intestinal Diseases as Seen in the Medical Dispensary" was read by Dr. Archibald A. Howell, Philadelphia, and discussed by Drs. John H. Musser, Jr., Philadelphia; Harry R. Decker, John A. Lichty, Pittsburgh, and closed by Dr. Howell. Dr. Musser being absent on government service his discussion was read by Secretary Moyer.

"The Pharmacology and Therapeutics of the Ductless Gland Preparations" was read by Dr. Charles E. deM. Sajous, Philadelphia, and discussed by Drs. S. Solis-Cohen, Judson Daland, Philadelphia; C. R. Jones, Jacob Rosenbloom, Pittsburgh, and closed by Dr. Sajous. In the absence of Dr. Cohen his discussion was read by Dr. Myer Solis-Cohen.

"Syphilis as a Factor in Diseases of the Thyroid Gland" was read by Dr. Thomas G. Simonton, Pittsburgh, and discussed by Drs. John A. Lichty, C. C. Wholey, Jacob Rosenbloom, Joseph H. Barach, Pittsburgh, and closed by Dr. Simonton.

"Hyperthyroidism and Mental Disorders" was read by Dr. William K. Walker, Pittsburgh, and discussed by Drs. Paul Titus, Harry R. Decker, Frederick B. Utley, C. C. Wholey, Pittsburgh; Thomas R. Currie, Philadelphia, and closed by Dr. Walker. The discussion of Dr. Titus was presented in manuscript.

"The Clinical Value of Electrocardiography" by Dr. S. Calvin Smith, Philadelphia, was read by title, Dr. Smith being in the Service.

"Thoracic Aneurysm, a Brief Clinical Review of the Subject from a Diagnostic Standpoint," was read by Dr. William H. Mercur, Pittsburgh, and discussed by Drs. Archibald A. Howell, Philadelphia; H. M. Hall, Jr., Pittsburgh; C. C. Huston, Knox; Philip Marvel, Atlantic City, N. J.; and closed by Dr. Mercur.

Adjourned until Wednesday, September 26, at 2 p. m.

Wednesday Afternoon, Sept. 26, 1917

The Section was called to order by the Chairman, Dr. Riesman.

The Executive Committee announced that, in the absence of Dr. Alfred Hand, Jr., Philadelphia, the Chairman had appointed Dr. Martin E. Rehfuss, Philadelphia, to take his place on the committee. The following report was then made: For chairman, Dr. Irwin J. Moyer, Pittsburgh; for secretary, Dr. George E. Holtzapple, York. On motion of Dr. Judson Daland, the secretary was instructed to cast the ballot and the officers nominated were elected.

In the symposium on Nephritis, "Pathology of Nephritis" by Dr. Oskar Klotz, Pittsburgh, was read by title because of the author's absence in Washington.

"Tests for the Measurement of Renal Efficiency in Relation to Prognosis in Nephritis" was read by Dr. Henry A. Christian, of Boston.

"Classification, Prognosis and Treatment in Nephritis," was read by Dr. Martin H. Fischer, Cincinnati.

"Composition of Sweat in Nephritis" was read by Dr. Joseph Sailer, Philadelphia.

"The Social and General Management of Nephritis as Seen in the Medical Dispensary" was read by Dr. Thomas C. Kelly, Philadelphia.

The preceding five papers were discussed by Drs. Judson Daland, Francis A. Faught, Archibald A. Howell, Philadelphia; William McKim Marriott, Baltimore, Md., and closed by Drs. Christian and Fischer.

On motion, duly seconded, the thanks of the section were extended to Drs. Christian, Fischer, Sailer and Kelly for their excellent papers.

"A Case of Myotonia and Two Cases of Progressive Muscular Atrophy with Metabolism Studies in Each," by Drs. C. C. Wholey and Max Kahn, Pittsburgh, was read by Dr. Wholey and discussed by Drs. Charles K. Mills, Philadelphia, and Jacob Rosenbloom, Pittsburgh.

"The Mediastinum" was read by Dr. Chauncey L. Palmer, Pittsburgh, and discussed by Drs. W. W. G. Maclachlan and Henry Klinzing, Pittsburgh.

Adjourned until Thursday, September 27, at 9 a. m.

Thursday Morning, Sept. 27, 1917

The Section was called to order by the Chairman, Dr. Riesman, in joint meeting with the Section on Pediatrics.

"Poliomyelitis: A Study of the 1916 Epidemic in Philadelphia," by Drs. Theodore H. Weisenburg and Simon S. Leopold, Philadelphia, was read by Dr. Leopold.

"Poliomyelitis; The Importance of Its Early Recognition; the Value and Technic of Spinal Puncture" was read by Dr. John F. Sinclair, Philadelphia.

The preceding two papers were discussed by Drs. Charles K. Mills, Myer Solis-Cohen, Harry Lowenburg, Philadelphia; B. Franklin Royer, Harrisburg; Edgar M. Green, Easton, and closed by Drs. Leopold and Sinclair.

"Acidosis," by Drs. John Howland and William McKim Marriott, Baltimore, Md., was presented by Dr. Marriott and discussed by Dr. Archibald A. Howell, Philadelphia. On motion of Dr. William N. Bradley, Philadelphia, the Section on Medicine and the Section on Pediatrics extended to Dr. Marriott a vote of thanks for his kindness in delivering the address.

"Food Anaphylaxis and Methods of Making Tests" was read by Dr. Albert Strickler, Philadelphia, and discussed by Drs. H. Brooker Mills, Harry Lowenburg, Philadelphia; Anna M. Schrade, Erie, and closed by Dr. Strickler.

"Serum Treatment of Pneumonia" was read by Dr. Courtland Y. White, Philadelphia.

"The Treatment of Pneumonia in Early Life," by Dr. Henry T. Price, Pittsburgh, was read by Dr. Z. R. Scott, Pittsburgh, Dr. Price having been called to the Service.

The preceding two papers were discussed by Drs. H. Brooker Mills, Myer Solis-Cohen, Harry Lowenburg, Philadelphia, Henry Finkelpearl, Ernest W. Willetts, M. B. Magoffin, Pittsburgh, and closed by Drs. White and Scott.

Section adjourned.

David Riesman, Chairman.
Irwin J. Moyer, Secretary.

MINUTES OF THE SECTION ON SURGERY

Tuesday Afternoon, Sept. 25, 1917

The meetings of the Section on Surgery were well attended in spite of the war and the difficulty which the committee had in arranging the program. The maximum attendance on Tuesday was 98, Wednesday 148, and Thursday 52, making the average daily attendance 99.

The meeting on Tuesday was called to order at 2 p. m. by the chairman, Dr. A. Ralston Matheny, Pittsburgh.

The chairman, Dr. Matheny, read his address and reported two interesting cases of angiosarcoma.

Paper No. 2, "Notes on the Operative Technic and After Treatment of Inguinal Hernia," by Dr. Penn G. Skillern, Jr., Philadelphia, was read. The discussion was opened by Dr. William J. Langfitt, Pittsburgh; followed by Drs. Moses Behrend, George M. Dorrance, Philadelphia; S. P. Mengel, Wilkes-Barre. Dr. William A. DeWitt, Blossburg, who was to have opened the discussion was not present.

Paper No. 3, "Intestinal Obstruction with Relationship to Operative Procedures, and the Treatment Thereof," by Dr. Nathaniel Ginsburg, Philadelphia, was not read. Dr. Ginsburg wired at the last minute that ill health prevented him from coming to the meeting or sending his paper in time. Dr. J. Stewart Rodman, Philadelphia, who was to open the discussion, was absent on account of war duty.

Paper No. 4, "The Treatment of Fractures of the Neck of the Femur with Special Reference to Whitman's Abduction Method, by Dr. George M. Dorrance, Philadelphia, was read. The discussion was opened by Dr. William P. Walker, South Bethlehem; followed by Drs. P. G. Skillern, Jr., Moses Behrend, Philadelphia.

Paper No. 5, "Pyelitis Complicating Pregnancy," by Dr. Harold A. Miller, Pittsburgh, was read. The discussion was opened by Dr. Elmer L. Meyers, Wilkes-Barre; followed by Dr. William P. Walker, South Bethlehem.

Paper No. 6, "Pneumococcic Peritonitis," by Dr. Evan W. Meredith, Pittsburgh, who could not be present on account of service in the army, was read by his assistant, Dr. Robert S. Entwisle. The paper was discussed by Dr. Evan O'Neill Kane, Kane.

Paper No. 7, "Uteroscopy," Dr. Alfred Heineberg, Philadelphia, was read. There was no discussion on this paper as the section adjourned on account of a meeting of the House of Delegates.

Wednesday Afternoon, Sept. 26, 1917

The section was called to order by Chairman Matheny at 2 p. m., who read a report of the executive Committee. The following officers of the section were elected: Chairman, Dr. John L. Atlee, Lancaster; Secretary, Dr. George M. Dorrance, Philadelphia.

It was decided to change the program in the afternoon, having the symposium on the Prostate first, because Dr. John B. Deaver, Philadelphia, had to leave on an early train. Dr. Deaver read Paper No. 12, "Selection of Cases for Prostatectomy," which was followed by Paper No. 10, "Surgical Treatment of the Prostate," by Dr. Edward Starr Judd, Rochester, Minn. Dr. William Carpenter MacCarty, Rochester, Minn., then followed with Paper No. 11, "The Principles of the Pathology of the Prostate," and Dr. Theodore Baker, Pittsburgh, read Paper No. 13, "Remote Symptoms of Prostatitis and Spermatocystitis." The discussion on these four papers was opened by Dr. Edward Martin, Philadelphia, followed by Dr. Moses Behrend, Philadelphia, and closed by Drs. Judd, MacCarty and Baker. It was impossible to darken the room for the use of the lantern, and, therefore, Drs. Judd and MacCarty could not show their many interesting slides.

Paper No. 8, "A Review of Certain Postulates in Pelvic Surgery," was read by Dr. William Rowland Davies, Scranton. The discussion was opened by Dr. George B. Klump, Williamsport; followed by Dr. Jacob A. Ruben, Pittsburgh.

The last paper was No. 9, "The Radical Cautery Operation in Carcinoma of Cervix," by Dr. X. O. Werder, Pittsburgh. Dr. John G. Clark, Philadelphia, who was to open the discussion, wired at the last minute that he could not be present. The discussion was opened by Dr. Edward A. Weiss, Pittsburgh.

Thursday Morning, Sept. 27, 1917

The section was called to order by the chairman, Dr. Matheny.

Paper No. 14, "Treatment of Fracture of the Patella," was read by Dr. Charles D. Schaeffer, Allentown. The discussion was opened by Dr. Moses Behrend, Philadelphia. Dr. Silas D. Molyneux, Sayre, who was to have opened the discussion, wired at the last minute that he was unable to be present.

Paper No. 16, "The Interrelation of Appendicitis, Cholecystitis and Pancreatitis," was read by Dr. Ernest Laplace, Philadelphia. The discussion was opened by Dr. George W. Reese, Shamokin; followed by Dr. Levi J. Hammond, Philadelphia.

Paper No. 15, "The Constitutional Disturbance of Toxic Goiter as Influenced by Surgical Therapy," was then read by Dr. Charles H. Frazier, Philadelphia. Dr. Walter Lathrop, Hazleton, who was to open the discussion, could not be present but sent his discussion, which was read by Dr. S. P. Mengel, Wilkes-Barre.

Paper No. 17, "Late Result in 204 Consecutive Cases of Amputation of the Breast for Carcinoma, Operated More than Three Years Ago," by Dr. John J. Buchanan, Pittsburgh, was read. Dr. Harold L. Foss, Danville, who was to open the discussion, wired that he could not be present. The paper was discussed by Drs. William Carpenter MacCarty, Rochester, Minn.; John D. Singley, Pittsburgh.

Paper No. 18, "Carrel-Dakin Treatment," by Dr. Jonathan M. Wainwright, Scranton, was not read. Dr. Wainwright wired that he could not be present as he had been called to the army.

Paper No. 19, "The Consideration of the Surgical Factors in Tubercular Peritonitis," by Dr. Levi Jay Hammond, Philadelphia, was read. The discussion was opened by Dr. Herbert B. Gibby, Wilkes-Barre; followed by Drs. Moses Behrend, Ernest Laplace, Philadelphia; William H. Glynn, Pittsburgh.

Paper No. 20, "The Cesarean Section in Eclampsia," by Dr. Charles G. Strickland, Erie, was not read. The paper has been received and we would recommend that it appear in the Journal.

Paper No. 21, "Pus Infections of the Anorectal Region," was read by Dr. C. C. Mechling, Pittsburgh. Dr. Eldredge L. Eliason, Philadelphia, who was to open the discussion, wired that he could not be present. The paper was discussed by Dr. Herbert B. Gibby, Wilkes-Barre.

It was moved by Dr. Laplace that the section extend their thanks to Drs. Judd and MacCarty for their excellent papers in the symposium on Surgery of the Prostate; seconded by Dr. Gibby; carried.

It was moved by Dr. Behrend that the section express their appreciation of the splendid way in which the officers managed the business of the section; seconded by Dr. Hammond; carried.

Adjournment.

A. Ralston Matheny, Chairman.
Donald Guthrie, Secretary.

SECTION ON EYE, EAR, NOSE AND THROAT DISEASES

Tuesday Afternoon, Sept. 25, 1917

The Section on Eye, Ear, Nose and Throat Diseases convened in the William Penn Hotel, Pittsburgh, Sept. 25, 1917, and was called to order by the Secretary, Dr. George B. Jobson, Franklin, at 2:25 p. m. In the absence of the chairman, Major John F. Culp, M. O. R. C., who had been called to Atlanta, Ga., on motion duly seconded and carried, Dr. E. B. Heckel, Pittsburgh, was elected to preside for the day.

Dr. George B. Jobson, Franklin, presented two patients, giving a history of each, which were discussed by Drs. E. B. Heckel and Adolph Krebs, Pittsburgh; Harvey M. Becker, Sunbury.

"Corneal Ulcers" was read by Dr. A. Rutherford Renninger, Philadelphia, and discussed by Drs. Edward Stieren, C. E. McKee, E. B. Heckel, Pittsburgh; D. I. Giarth, Ford City; L. H. Taylor, Wilkes-Barre; J. F. Klinedinst, York; G. R. S. Corson, Pottsville, and G. H. Cross, Chester.

"Indications for Operation in Glaucoma" was read by Dr. Wm. Campbell Posey, Philadelphia, and discussed by Dr. Joseph E. Willetts, who read the discussion of Dr. William Zentmayer, Philadelphia; Drs. E. B. Heckel, Pittsburgh; F. O. Lewis, E. A. Shumway, Philadelphia; H. M. Becker, Sunbury, and closed by Dr. Posey.

"Minor Eye Injuries and the Compensation Law" was read by Dr. Lester E. Schoch, Shamokin, and discussed by Drs. L. H. Taylor, Wilkes-Barre; Wm. Campbell Posey, Philadelphia; E. J. Stein, Lancaster; G. H. Cross, Chester; Edward Stieren, E. B. Heckel, Pittsburgh, and Dr. Schoch. Dr. Stieren, in his discussion offered the following: "Resolved, That this Society recommend to the Pennsylvania Workmen's Compensation Board that a resulting vision of 6/15 or better with a correcting glass after cataract extraction does not constitute loss of vision in this eye." This was ordered conveyed to the House of Delegates.

"Herpes Zoster Ophthalmicus" was read by Dr. J. Ferdinand Klinedinst, York, and discussed by Drs. Edward A. Shumway, Philadelphia, and Edward Stieren, Pittsburgh.

"Diseases of the Eye from Focal Infections" was read by Dr. Adolph Krebs, Pittsburgh, and discussed by Drs. Edward Stieren and E. B. Heckel, Pittsburgh.

"Traumatic Sixth and Seventh Nerve Palsy, and Operative Treatment of the Same" was read by Dr. Timothy J. Moran and discussed by Drs. Lyndon H. Landon, Pittsburgh; Wm. Campbell Posey, Philadelphia, and closed by Dr. Moran.

Adjourned until Wednesday, September 26, at 2 p. m.

Edward B. Heckel, Chairman pro tem.,
George B. Jobson, Secretary.

Wednesday Afternoon, Sept. 26, 1917

The section was called to order at 2 p. m. by the secretary, Dr. Jobson. On motion of Dr. L. H. Taylor, Wilkes-Barre, duly seconded and carried, Dr. Clinton J. Kistler of Lehighton, was elected chairman for the afternoon. The Executive Committee reported as officers of the section for the coming year the names of Dr. Edward Stieren, Pittsburgh, for chairman, and Dr. Adolph Krebs, Pittsburgh, for secretary. On motion duly seconded and carried the secretary cast the ballot and they were declared elected.

"Nonoperative Treatment of Nasal Sinusitis" was read by Dr. Eugene L. Vansant, Philadelphia, and discussed by Drs. Lewis H. Taylor, Wilkes-Barre; Henry M. Hall, George W. Stimson, Pittsburgh; G. R. S. Corson, Pottsville; John B. McMurray, Washington; J. C. McAllister, Ridgway; Nelson S. Weinberger, Sayre; C. J. Kistler, Lehighton; William E. Dodson, Indiana; Leslie R. Hazlett, Butler, and closed by Dr. Vansant.

"Treatment of Chronic Hypertrophic Rhinitis" was read by Dr. Edgar J. Stein, Lancaster, and discussed by Drs. Nelson S. Weinberger, Sayre; J. Paul Roebuck, Lancaster; Harvey M. Becker, Sunbury; C. J. Kistler, Lehighton, and closed by Dr. Stein.

"Laryngeal Tuberculosis" was read by Dr. Charles S. Rebuck, Harrisburg, and discussed by Drs. Samuel P. Glover, Altoona; G. W. Stimson, A. R. Hampsey, Pittsburgh; E. J. Stein, Lancaster; Eugene L. Vansant, George B. Wood, Philadelphia; L. Leo Doane, Butler; Evan O. Kane, Kane; C. J. Kistler, Lehighton, and closed by Dr. Rebuck.

"Hay Fever" was read by Dr. Curtis Clyde Eves, Philadelphia, and discussed by Drs. Evan O. Kane, Kane; F. C. Stahlman, Charleroi; E. J. Stein, Lancaster; S. S. King, Johnstown, and closed by Dr. Eves.

"'Hoarseness,' Its Relation to Local and General Diseases" was read by Dr. J. Homer McCready, Pittsburgh; and discussed by Dr. E. L. Vansant, Philadelphia.

Adjourned at 5:10 p. m. until Thursday, September 27, at 9 a. m.

Clinton J. Kistler, Chairman pro tem.,
George B. Jobson, Secretary.

Thursday Morning, Sept. 27, 1917

The section was called to order at 9:30 a. m., by the secretary, Dr. Jobson, who introduced Dr. Edward Stieren, Pittsburgh, chairman of the section for the coming year, to preside at this meeting.

Dr. Stieren: Members of the Section: I am duly appreciative of the honor conferred in electing me chairman of this section for next year and, while I have not assumed the duties of the office yet, during the absence of Dr. Culp I have been asked to preside this morning. I ask all of you to help us next year in getting out a good program and a good attendance.

"Malignant Diseases of the Throat" was read by Dr. B. M. Dickinson, Pittsburgh, and discussed by Drs. Chevalier Jackson, Philadelphia; R. H. Boggs, Pittsburgh, and closed by Dr. Dickinson.

"The Treatment of Malignancy in the Mouth and Throat by Radium" was read by Dr. Russell H. Boggs, Pittsburgh, and discussed by Drs. Archibald A. MacLachlan, Richard E. Brenneman, Pittsburgh; B. Alexander Randall, Philadelphia; and closed by Dr. Boggs.

"Abscess of the Lung Following Removal of Tonsils" by Drs. John R. Simpson (who has gone to France with the Pittsburgh unit) and Harry G. Noah, Pittsburgh, was not read.

"Foreign Bodies in the Bronchi and Esophagus; Report of Cases" was read by Dr. Ellen J. Patterson, Pittsburgh, and discussed by Drs. Chevalier Jackson, Fielding O. Lewis, C. C. Eves, Philadelphia.

"Pituitary Tumor; Operation by Transphenoidal Route" was read by Dr. Fielding O. Lewis, Philadelphia, and discussed by Drs. Chevalier Jackson, Charles H. Frazier, Philadelphia; Lyndon H. Landon, Pittsburgh, and closed by Dr. Lewis.

"Acute Suppuration of the Middle Ear" was read by Dr. J. Clarence Keeler, Philadelphia, and discussed by Drs. William Hardin Sears, Huntingdon; B. Alexander Randall, Philadelphia, and closed by Dr. Keeler.

Section adjourned at 12:55 p. m.

Edward Stieren, Chairman pro tem.
George B. Jobson, Secretary.

MINUTES OF THE SECTION ON PEDIATRICS

Tuesday Afternoon, Sept. 25, 1917

The Section on Pediatrics convened in the William Penn Hotel, Pittsburgh, Sept. 25, 1917, and was called to order by the chairman, Dr. Samuel McC. Hamill, Philadelphia, shortly after 2 p. m.

The Chairman's Address was delivered by Dr. Hamill.

"The Influence of Prenatal Care on Infant Mortality" was read by Dr. Charles H. Miner, Wilkes-Barre, and discussed by Drs. L. S. Cogill, W. N. Bradley, J. P. C. Griffith, John D. McLean, Philadelphia, and closed by Dr. Miner.

"The Management of Difficult Cases of Breast Feeding" was read by Dr. Howard Childs Carpenter, Philadelphia, and discussed by Drs. Theodore J. Elterich, Pittsburgh; Harry Lowenburg, L. S. Cogill, J. P. C. Griffith, Philadelphia, and closed by Dr. Carpenter.

"Meningitis, the Different Forms and Their Diagnosis" was read by Dr. Edwin E. Graham, Philadelphia, and discussed by Drs. James K. Everhart, Pittsburgh; J. P. C. Griffith, H. Brooker Mills, Harry Lowenburg, Philadelphia, and closed by Dr. Graham.

Adjourned until Wednesday, September 26, at 2 p. m.

Wednesday Afternoon, Sept. 26, 1917

The Section was called to order by the chairman, Dr. Hamill, shortly after 2 p. m. The Executive Committee (which at this first session of the Section on Pediatrics consisted of the present officers) suggested for nomination as chairman of the section Dr. Percival J. Eaton, Pittsburgh. The chairman, Dr. Hamill, nominated as secretary of the section, Dr. William N. Bradley, Philadelphia. On motion of Dr. Charles W. Burr, Philadelphia, that nominations be closed, duly seconded and carried, the chairman announced that the two officers named were duly elected, the ballot of the section having been cast for them.

"So-Called Habit Spasm (Tic) and St. Vitus' Dance, Their Relative Importance as Signs of Congenital Weakness" was read by Dr. Charles W. Burr, Philadelphia, and discussed by Drs. Harry W. Mitchell, Warren; Theodore Diller, Pittsburgh; J. P. C. Griffith, Harry Lowenburg, S. McC, Hamill, Philadelphia; Harry W. Albertson, Scranton, and closed by Dr. Burr.

"Acute Otitis Media in Childhood" was read by Dr. George B. Wood, Philadelphia.

"The Common Cold" was read by Dr. Percival J. Eaton, Pittsburgh.

The preceding two papers were discussed by Drs. Harry Lowenburg, Philadelphia; Henry J. Benz, Pittsburgh, and closed by Drs. Wood and Eaton.

"Pyelitis" was read by Dr. Robert K. Rewalt, Williamsport, and discussed by Drs. W. N. Bradley, H. Brooker Mills, Harry Lowenburg, Philadelphia, and closed by Dr. Rewalt.

"The Employment of Opium in the Treatment of Children" was read by Dr. J. P. Crozer Griffith, Philadelphia, and discussed by Drs. Harry W. Albertson, Scranton; H. Brooker Mills, Philadelphia, and closed by Dr. Griffith.

The chairman, Dr. Hamill, announced that the next meeting of the Section on Pediatrics would be held in conjunction with the Section on Medicine in the room in which that section is holding its meetings, and closed with the following remarks:

"I very much appreciate the privilege of acting in the capacity of chairman of this intial meeting, a position to which I was appointed. This does not carry the same honor that falls on my successor, whom you have elected to the chairmanship. In formulating the program we aimed to get together a series of papers which we thought would be of real value to the members of the Society. Probably I had a slightly selfish purpose in the part I played in this, because I tried to have subjects introduced for discussion on the principle that what was good for me might also be helpful to you. I believe from the very satisfactory attendance and close attention paid to the papers that the psychology of that attitude was correct. I want to thank you all very sincerely for coming here and showing such keen interest in the program. I also want to thank those who have contributed the papers. We have had a rather commendable experience in this year of military conflict in that we have had but two absentees from our program."

Adjourned until Thursday, September 27 at 9 a. m., in joint meeting with the Section on Medicine.

Samuel McC. Hamill, Chairman.
William N. Bradley, Secretary.

MINUTES OF THE CONFERENCE OF SECRETARIES

The Twelfth Annual Banquet and Conference of Secretaries of the component societies of the Medical Society of the State of Pennsylvania were held at the Fort Pitt Hotel, Pittsburgh, Tuesday, September 25. The meeting was called to order by the chairman, Dr. Harry W. Albertson, Scranton. The minutes of the 1916 Conference as printed in the Journal, November, 1916, were read, approved and on motion adopted. On motion an order was drawn on the treasurer for $4.10 for printing.

The chairman appointed as a nominating committee Drs. W. A. Womer, C. R. Rickenbaugh and W. S. Wray.

Dr. Myers W. Horner, Mt. Pleasant, gave a talk on "Bulletins."

Dr. Horatio W. Gass, Sunbury, read a paper on "Enthusiasm."

The papers were discussed by Drs. G. R. S. Corson, C. R. Rickenbaugh, J. B. F. Wyant, C. C. Laffer, C. J. Hamme, C. L. Stevens, and H. C. Kinzer.

The chairman called on the following guests who made some interesting remarks: Drs. John M. Thorne, Pittsburgh; W. T. Sharpless, West Chester; George W. Wagoner, Johnstown; Frederick L. Van Sickle, Olyphant.

The nominating committee made the following recommendations for officers for the ensuing year: Chairman, Dr. H. C. Kinzer, Lancaster County; vice chairman, Dr. A. E. Thompson, Washington County; secretary and treasurer, Dr. M. W. Horner Westmoreland County. On motion the report was received and the nominees declared elected. The chairman appointed the following Executive Committee: Dr. Joseph Scattergood, chairman, Chester County; Edgar S. Buyers, Montgomery County; A. V. B. Orr, Delaware County.

Adjourned at 7:30 p. m. for the banquet. After partaking of a bountiful dinner there was a general discussion of the various methods employed to interest members in their county societies.

The following were present: Drs. Frederick L. Van Sickle, Olyphant, William T. Sharpless, West Chester, Trustees; C. L. Stevens, Athens, Secretary; G. W. Wagoner, Johnstown, Treasurer of the State Society; John M. Thorne, Pittsburgh, President of Allegheny County Society; and the following secretaries and editors from county societies: Drs. W. H. Mayer, Allegheny County; Jay B. F. Wyant, Armstrong County; Harry I. Shoenthal, Bedford County; J. A. Trexler, Carbon County; Joseph Scattergood, Chester County; C. C. Laffer, Crawford County; C. R. Rickenbaugh, Cumberland County; H. W. Albertson, Lackawanna County; H. C. Kinzer, Lancaster County; W. A. Womer, Lawrence County; Frank M. Bleakney, Mercer County; Edgar S. Buyers, W. R. Roberts, Montgomery County; H. W. Gass, Northumberland County; William S. Wray, Philadelphia County; G. R. S. Corson, Schuylkill County; H. C. McKinley, Somerset County; M. W. Horner, Westmoreland County; C. J. Hamme, York County.

The Conference adjourned at 9 p. m.

H. W. ALBERTSON, Chairman,
H. C. KINZER, Secretary.

MEMBERS OF HOUSE OF DELEGATES ANSWERING ROLL CALL

Allegheny County Society.—John M. Thorne, president; Henry P. Ashe, Adolph Krebs, Willison H. McCombs, Milton Goldsmith, Amos W. Colcord, Edward B. Heckel, William S. Langfitt, Elmer E. Wible, Archibald A. MacLachlan, Samuel F. McComb.

Armstrong County Society.—Howard M. Welsh, president; Charles A. Rogers.

Bedford County Society.—Harry I. Shoenthal, secretary.

Berks County Society.—Israel Cleaver, Ira G. Shoemaker.

Blair County Society.—Joseph D. Findley.

Bradford County Society.—Nelson S. Weinberger.

Butler County Society.—L. Leo Doane.

Cambria County Society.—G. W. Wagoner.

Carbon County Society.—Jacob A. Trexler, secretary.

Center County Society.—James L. Seibert.

Chester County Society.—Joseph Scattergood, secretary; Charles C. Bullock.

Clearfield County Society.—J. Frank Rowles.

Columbia County Society.—John W. Bruner.

Crawford County Society.—Glennis E. Humphrey, president.

Cumberland County Society.—Calvin R. Rickenbaugh, secretary.

Dauphin County Society.—J. B. McAlister, J. Wesley Ellenberger.

Delaware County Society.—Harry M. Armitage, president; George H. Cross.

Elk County Society.—S. G. Logan.

Erie County Society.—George S. Dickinson, president; David H. Strickland, Wallace R. Hunter.

Huntingdon County Society.—John M. Beck, secretary; John M. Keichline, Jr.

Indiana County Society.—George E. Simpson, president; William E. Dodson.

Jefferson County Society.—Abraham F. Balmer.

Juniata County Society.—Benjamin H. Ritter.

Lackawanna County Society.—J. Norman White, president; H. W. Albertson, W. Rowland Davies.

Lancaster County Society.—J. Paul Roebuck, president; Frank G. Hartman, Harry B. Roop.

Lawrence County Society.—Brant E. Sankey, president; William A. Womer.

Lehigh County Society.—Frederick R. Bausch.

Luzerne County Society.—Elmer L. Meyers, president; Lewis H. Taylor, Samuel P. Mengel.

Lycoming County Society.—Horace G. McCormick, Charles W. Youngman.

Mercer County Society.—Frank Bleakney, secretary.

Mifflin County Society.—Benjamin R. Kohler, president; William H. Kohler.

Montgomery County Society.—Herbert A. Bostock, president; John E. Gotwals, Joseph K. Weaver.

Northampton County Society.—Edgar M. Green, William P. Walker.

Northumberland County Society.—Horatio W. Gass, secretary; Harvey M. Becker.

Perry County Societv.—W. Homer Hoopes.

Philadelphia County Society.—Henry D. Jump, president; Wilmer Krusen, William S. Wray, William N. Bradley, C. Randall MacCarroll, H. Brooker Mills, Thomas R. Currie, Christian B. Longenecker, J. Montgomery Baldy, John D. McLean, John W. West, Henry K. Mohler, Edward E. Montgomery, Martha Tracy, Charles E. deM. Sajous, Francis A. Faught.

Potter County Society.—Nathan W. Church.

Schuylkill County Society.—G. R. S. Corson, secretary; G. W. Ressler.

Somerset County Society.—Franklin E. Sass.

Venango County Society.—George B. Jobson.

Warren County Society.—Harry W. Mitchell.

Washington County Society.—Charles C. Cracraft, William D. Martin.

Wayne County Society.—Edward O. Bang.

Westmoreland County Society—Harold N. Prothero, president; Edward M. Clifford.

York County Society.—William F. Bacon, Curtis J. Hamme.

President.—Charles A. E. Codman.

Vice President.—Herbert B. Gibby.

NONVOTING MEMBERS WHO WERE NOT SEATED FROM THEIR RESPECTIVE COUNTIES

C. L. Stevens, secretary; Irwin J. Moyer, William T. Sharpless, Frederick L. VanSickle, J. B. F. Wyant, trustees.

MEMBERS IN ATTENDANCE AT THE SESSION IN PITTSBURGH, SEPTEMBER 24, 25, 26 AND 27, 1917

SECTION ON MEDICINE

Allegheny County Society—W. J. McGeary, Allison Park; C. H. Smith, Arnold; W. N. Marshall, Aspinwall; A. H. Elliott, J. S. Kelso, C. L. Lutz, Avalon; F. W. Halstead, Bakerstown; J. S. Donaldson, T. A. Miller, J. C. Welch, Bellevue; C. E. Bair, P. C. Cope, C. C. Gardner, F. L. Morrow, J. C. Nicholls, Braddock; A. W. Hopper, S. C. McGarvey, Bridgeville; W. J. Connelly, L. J. Davis, Carnegie; L. V. L. Brown, Castle Shannon; W. P. McCulloch, Cheswick; C. A. Orr, Crafton; L. H. Halpert, W. S. McCausland, G. E. Martin, Duquesne; I. C. Duncan, East McKeesport; I. E. Rowland, Elizabeth; J. F. Hufford, Elrama (Wash. Co.); H. H. Rittenhouse, Federal; L. C. Fausold, Glenshaw; A. C. Davis, Hites; J. L. Foster, Hoboken; W. E. Lawson, D. Reiter, Homestead; V. Z. Allison, Homewood; E. B. Henry, Ingomar; L. C. Botkin, J. S. Crawford, Ingram; J. Porter, A. G. Sandblad, D. E. Walters, McKeesport; C. L. McKinnon, McKees Rocks; G. B. C. Elliott, A. K. Lyon, A. H. Ricthmuller, Millvale; J. F. McNeely, Munhall; A. S. Kaufman, D. M. Koontz, New Kensington (Westm. Co.); C. B. Denny, F. W. Mathewson, Oakdale; C. J. Aaron, N. Albrecht, I. H. Alexander, C. S. Allison, G. C. Anderson, V. L. Andrews, L. F. Ankrim, C. S. Apgar, H. P. Ashe, S. Ayres, G. R. Baalith, J. T. Baltrusaitis, J. H. Barach, H. A. Barnhardt, H. Bernstein, F. T. Billings, L. C. Bixler, J. L. Black, E. L. Blair, C. J. Bowen, J. A. Boyd, F. W. Bremer, P. C. Bruce, D. N. Bulford, J. G. Burke, W. T. Burleigh, R. G. Burns, P. W. Bushong, M. C. Cameron, G. H. Camp, C. L. Campbell, R. J. Campbell, W. H. Caskey, H. E. Clark, R. W. Clark, W. A. Clark, J. J. Clarke, T. P. Cochran, Giacomo Conti, G. S. Cunningham, A. S. Daggette, F. Davis, T. Diller, B. E. Dornbush, J. M. Douthett, A. A. Dranga, J. P. Duggan, O. N. Eisaman, K. A. Emmerling, D. R. Evans, A. Finkelpearl, H. Finkelpearl, E. N. Foster, W. S. Foster, O. Fouse, R. S. Freed, E. M. Frost, E. R. Gardner, F. G. Gardiner, S. George, Milton Goldsmith, M. A. Gould, C. O. Goulding, W. G. Graham, J. Grekin, P. B. Grogin, H. M. Hall, Jr., C. A. Hauck, S. R. Haythorn, L. H. Hector, J. P. Hegarty, C. H. Henninger, C. C. Hersman, A. J. Hesser, A. V. Hicks, R. T. Hood, A. J. Hopkins, J. D. Iams, C. H. Ingram, M. M. Jack, A. H. Jahn, H. D. Jew, J. I. Johnston, C. R. Jones, H. L. Jones, W. W. Jones, F. S. Kellogg, F. Kenworthy, I. K. King, T. T. Kirk, H. Klinzing, A. Koenig, A. L. Krepps, L. E. Lacock, L. Lasday, J. P. Laughlin, C. P. Leininger, J. A. Lichty, C. E. Lindeman, F. E. Luke, C. B. McAboy, R. J. McAdams, J. L. McBride, W. J. McConnell, W. P. McCorkle, J. C. McCormick, W. McCracken, E. B. McCready, R. J. McCready, A. C. McGeagh, M. S. McKennan, T. M. T. McKennan, A. McKibben, T. M. McLenahan, G. W. McNeil, C. P. Macdonald, W. W. G. Maclachlan, M. B. Magoffin, S. J. Marcus, C. S. Marshall, E. E. Mattox, W. C. Maxwell, E. E. Mayer, W. H. Mayer, W. H. Mercur, F. B. Miller, L. O. Miller, O. L. Miller, S. C. Milligan, J. S. Morgan, A. F. B. Morris, C. W. Morton, I. J. Moyer, E. E. Neely, T. G. Nelan, H. G. Noah, W. L. O'Hagan, C. T. Osterloh, J. R. Owens, C. L. Palmer, H. B. Patterson, E. O. Pearson, A. Pettit, S. N. Pool, A. D. Price, D. G. Rafferty, G. W. Rall, D. G. Richey, F. H. Rimer, W. H. Rodgers, J. Rosenbloom, E. P. Schatzman, F. M. Schrack, L. L. Schwartz, A. Shapira, H. A. Shaw, A. W. Sherrill, T. G. Simonton, L. M. Smith, H. M. Snitzer, G. W. Strickland, C. J. Stybr, J. Stybr, J. M. Thorne, G. G. Turfley, F. B. Utley, T. C. VanHorne, G. H. Vaux, W. K. Walker, A. W. Wallis, H. Weiss, H. G. Wertheimer, H. C. Westervelt, C. C. Wholey, M. Wiant, H. L. W. Wignall, E. W. Willetts, I. Williams, J. M. Wilson, J. Wolf, C. H. Wolfe, W. A. Woodburn, J. W. Worrell, J. H. Wright, W. A. Wycoff, V. J. Yorty, S. Zabarenko, E. Zugsmith, Pittsburgh; D. B. Ludwig, L. D. Smith, Pitcairn; M. R. Feltwell, S. D. Jennings, Sewickley; H. F. Fischer, Springdale; W. N. Cunningham, H. W. Morrow, Swissvale; W. A. Arnold, C. L. Leydic, S. F. McComb, J. A. Weamer, Tarentum; A. L. Trevaskis, Turtle Creek; A. E. Torrens, West View; J. S. Cadwalader, Wexford; R. W. Allison, J. I. Armstrong, G. D. Engle, W. M. Findley, J. D. McClure, H. S. McClymonds, F. S. Pershing, J. G. Wakefield, Wilkinsburg; S. E. Nowry, Wilmerding; E. L. Martin, Atlantic City, N. J.

Armstrong County Society—T. J. Henry, A. H. Townsend, Apollo; G. S. Morrow, Dayton; J. W. Campbell, Elderton; W. H. McCafferty, C. M. McLaughlin, W. J. Ralston, C. A. Rogers, Freeport; T. L. Aye, Kelly Station; F. C. Monks, Kittanning; C. C. Parks, D. H. Riffer, H. M. Welsh, Leechburg; S. E. Ambrose, Rural Valley; J. A. Kelly, Whitesburg.

Beaver County Society—J. L. Miller, Aliquippa; A. N. Mellott, Ambridge; U. S. Strouss, Beaver; G. J. Boyd, K. T. Schley, Beaver Falls; H. H. Heinrich, Enon Valley (Law. Co.); G. F. Boal, Freedom; M. L. McCandless, Rochester.

Bedford County Society—H. I. Shoenthal, New Paris.

Berks County Society—I. Cleaver, I. G. Shoemaker, Reading.

Blair County Society—R. T. Eldon, A. S. Kech, T. M. Morrow, Altoona; D. C. Confer, Duncansville; J. S. Bonebreak, Martinsburg.

Butler County Society—R. J. Grossman, W. J. Grossman, Butler; C. S. Hunter, West Sunbury.

Cambria County Society—F. U. Ferguson, Gallitzin; H. H. Penrod, Johnstown; C. A. Fitzgerald, South Fork.

Carbon County Society—J. A. Trexler, Lehighton.

Center County Society—D. Dale, Bellefonte; G. H. Woods, Pine Grove Mills.

Chester County Society—C. C. Bullock, J. T. Rothrock, W. T. Sharpless, West Chester.

Clarion County Society—C. C. Huston, Knox; J. F. Summerville, Monroe; A. J. Hepler, New Bethlehem; R. S. Keeler, St. Petersburg.

Clearfield County Society—G. B. Yeaney, Clearfield; R. L. Williams, Houtzdale; J. F. Rowles, Mahaffey; G. B. Shivery, Woodland.

Clinton County Society—J. M. Corson, Chatham Run.

Crawford County Society—G. E. Humphrey, Cambridge Springs; A. W. Clouse, Geneva; O. H. Jackson, C. C. Laffer, F. L. Nisbet, Meadville.

Cumberland County Society—H. C. Lawton, Camp Hill; C. R. Rickenbaugh, Carlisle.

Dauphin County Society—J. W. Ellenberger, J. B. McAlister, R. F. L. Ridgway, Harrisburg; D. W. C. Laverty, Middletown.

Elk County Society — G. M. Hutchison, Dagus Mines; S. G. Logan, Ridgway.

Erie County Society—J. F. Rutherford, Cranesville; G. S. Dickinson, B. Lewinson, A. M. Schrade, Erie.

Fayette County Society—L. P. McCormick, Connellsville; G. B. Hansel, Fayette City; A. L. Eddy, Greensboro (Greene Co.); C. H. LaClair, Uniontown.

Franklin County Society—W. C. Schultz, Waynesboro.

Greene County Society—T. B. Hill, T. N. Millikin, C. W. Spragg, F. S. Ullom, Waynesburg.

Huntingdon County Society—J. M. Beck, Alexandria; G. G. Harman, Huntingdon; C. Campbell, Petersburg.

Indiana County Society—M. A. Sutton, Avonmore (Westm. Co.); L. S. Clagett, W. S. McCreight, Blairsville; H. B. Buterbaugh, F. W. St. Clair, Indiana; T. D. Stephens, Penn Run.

Jefferson County Society—W. C. Newcome, Big Run; H. P. Thompson, Brookville; N. C. Mills, Eleanor; D. W. Thomas, Force (Elk Co.); H. B. King, Reynoldsville.

Lancaster County Society—H. B. Roop, Columbia; F. G. Hartman, H. C. Kinzer, Lancaster.

Lawrence County Society—W. C. Autenreith, Bessemer; J. R. Cooper, H. G. Dean, L. H. Gageby, C. F. McDowell, H. W. McKee, E. McLaughry, B. E. Sankey, R. A. Wallace, W. A. Womer, New Castle; K. M. Cook, New Wilmington.

Lycoming County Society—E. Everett, Millville (Col. Co.); H. G. McCormick, C. E. Shaw, C. W. Youngman, Williamsport.

McKean County Society—A. A. VanSlyke, Mt. Jewett.

Mercer County Society—F. M. Bleakney, B. A. Montgomery, Grove City; A. I. Hoon, W. W. Richardson, Mercer; P. E. Biggins, Sharpsville.

Montgomery County Society—E. S. Buyers, Norristown.

Northampton County Society—E. M. Green, Easton.

Northumberland County—H. W. Gass, Sunbury.

Perry County Society—W. H. Hoopes, Newport; A. D. VanDyke, Renovo (Clinton Co.)

Philadelphia County Society—C. A. E. Codman, J. Daland, J. C. Doane, F. A. Faught, A. A. Howell, H. D. Jump, T. C. Kelly, S. S. Leopold, J. D. McLean, C. K. Mills, H. K. Mohler, J. H. Musser, Jr., M. E. Rehfuss, D. Riesman, A. Rivkees, C. E. deM. Sajous, J. Sailer, M. Solis-Cohen, F. E. Stewart, A. Strickler, M. Tracy, J. W. West, C. Y. White, F. Woodbury, Philadelphia.

Potter County Society—N. W. Church, Ulysses.

Schuylkill County Society—G. W. Ressler, Ashland; W. T. Williams, Mt. Carmel (Northum. Co.)

Somerset County Society—C. F. Livengood, Boswell; C. W. Frantz, H. P. Meyers, Confluence; A. M. Lichty, Elk Lick; R. T. Pollard, Garrett; H. Hertzler, Jenners; B. Lichty, W. T. McMillan, Meyersdale; J. R. Hemminger, Somerset; G. C. Berkheimer, Windber.

Venango County Society—W. G. Gilmore, Emlenton; C. H. Brown, Franklin; P. J. McLain, S. A. Slater, Oil City; J. M. Murdoch, Polk.

Warren County Society—H. W. Mitchell, M. P. Mitchell, P. G. Weston, Warren.

Washington County Society—W. L. Dodd, Amity; H. L. Snodgrass, Buffalo; G. L. McKee, Burgettstown; A. L. Runion, Canonsburg; J. C. Enos, J. W. Hunter, Charleroi; J. N. Sprowls, Claysville; W. D. Martin, Dunns Station; B. A. Emery, Eighty-Four; R. E. Connor, J. McElroy, Hickory; W. A. LaRoss, McDonald; C. T. Graves, Monongahela; L. W. Braden, Ten Mile; C. T. Dodd, E. M. Hazlett, H. Perry, G. W. Ramsey, J. M. C. Reynolds, L. D. Sargent, G. B. Woods, Washington; J. M. Timmons, West Alexander.

Westmoreland County Society—E. L. Piper, Export; W. M. Bortz, J. S. Crawford, W. J. K. Kline, Greensburg; H. N. Prothero, L. B. R. Smith, Jeannette; T. St. Clair, Latrobe; C. D. Ambrose, J. B. Johnson, Ligonier; A. R. Wilson, Monessen; H. W. Tittle, New Florence; A. M. Cochran, Salina; W. H. Fetter, A. A. Waide, Scottdale; D. S. Hutton, Smithton; T. P. Painter, United; J. A. Boale, J. M. Patton, R. H. Speer, J. C. Stahlman, Vandergrift; W. H. Brown, Youngwood.

York County Society—C. J. Hamme, Dover.

SECTION ON SURGERY

Allegheny County Society—W. J. K. Snyder, Avalon; A. H. Gross, G. H. Walker, Bellevue; C. N. Schaefer, C. M. Thomas, Carrick; A. W. Colcord, Clairton; H. H. Meanor, H. B. Speer, Coraopolis; L. H. Botkin, Duquesne; J. Purman, Homestead; M. H. Bachman, J. P. Blackburn, C. A. Rankin, W. M. Woodward, McKeesport; J. A. Lafferty, W. C. Minnich, J. G. Steedle, G. R. Wycoff, McKees Rocks; A. P. Fogleman, Munhall; J. A. Huth, Natrona; J. H. Alexander, G. Alvino, R. B. Armstrong, T. Baker, W. M. Beach, R. J. Behan, N. H. Bennett, G. F. Berg, C. F. Bietsch, R. H. Boggs, C. L. Bradford, R. E. Brenneman, W. C. Bryant, J. J. Buchanan, J. C. Burt, W. H. Cameron, W. M. Campbell, W. A. Caven, B. S. Chaffee, S. A. Chalfant, N. P. Davis, R. E. Davison, H. R. Decker, W. B. Denslow, H. H. Donaldson, C. A. Duffy, G. W. Ely, R. M. Entwisle, W. A. Forster, W. E. Gardner, J. L. Gilmore, W. H. Glynn, W. G. Goehring, L. R. Goldsmith, M. F. Goldsmith, T. G. Greig, G. W. Grier, J. P. Griffith, S. M. Hankey, E. B. Haworth, G. L. Hays, H. C. Hieber, C. A. Hill, L. Hirsch, J. Hodgkiss, W. M. Holtz, R. R. Huggins, W. P. Hughes, G. C. Johnston, J. R. Johnston, H. J. Kalet, N. P. Keller, H. P. Kohberger, J. J. Kvatsak, W. S. Langfitt, G. Leibold, W. H. McCombs, J. F. McCullough, S. L. McCurdy, H. E. McGuire, W. B. McKenna, S. H. McKibben, J. W. Macfarlane, J. S. Mackrell, A. R. Matheny, C. C. Mechling, H. A. Miller, J. D. Milligan, E. S. Montgomery, I. L. Ohlman, J. J. Rectenwald, L. E. Rectenwald, F. A. Rhodes, J. A. Ruben, W. K. T. Sahm, K. I. Sanes, M. Schonfield, J. H. Seipel, W. O. Sherman, N. Shillito, H. M. Sigal, D. L. Simon, J. D. Singley, H. M. Smith, M. Spiro, C. A. Stillwagen, M. E. Stover, L. W. Swope, V. D. Thomas, E. J. Thompson, P. Titus, C. M. Watson, B. B. Wechsler, G. C. Weil, E. A. Weiss, G. R. Winters, X. O. Werder, G. A. Zieg, Pittsburgh; R. W. Dickson, Sewickley; M. W. Heilman, F. W. Silsby, Tarentum; H. C. Diltz, J. W. Dixon, C. A. Lauffer, F. M. Storer, Wilkinsburg; F. F. Simpson, Washington, D. C.

Armstrong County Society—J. M. Cooley, Kittanning.

Beaver County Society—M. I. Cornelius, J. H. Wilson, Beaver; T. P. Simpson, Beaver Falls; A. B. Cloak, F. H. McCaskey, Freedom; W. J. Langfitt, Pittsburgh (Alle. Co.); H. W. Bernhardy, Rochester.

Bedford County Society—F. S. Campbell, Hopewell.

Blair County Society—G. D. Bliss, C. W. Delaney, J. D. Findley, Altoona; W. A. Nason, Roaring Spring.

Bradford County Society—Donald Guthrie, Sayre.

Cambria County Society—H. Somerville, Chest Springs; C. B. Millhoff, J. L. Sagerson, H. M. Stewart, G. W. Wagoner, Johnstown; B. F. Bowers, St. Benedict; W. S. Wheeling, Windber (Somer. Co.)

Chester County Society—J. Scattergood, West Chester.

Clarion County Society—J. B. Miller, Sligo.

Clearfield County Society—S. J. Waterworth, W. O. Wilson, Clearfield.

Columbia County Society—J. W. Bruner, Bloomsburg.

Dauphin County Society—H. F. Smith, Harrisburg.

Delaware County Society—H. M. Armitage, Chester.

Erie County Society—W. R. Hunter, D. H. Strickland, Erie.

Fayette County Society—W. M. Lilley, Brownsville; S. H. Baum, E. R. Rasely, Uniontown.

Greene County Society—R. E. Brock, Waynesburg.

Huntingdon County Society—J. M. Johnston, Huntingdon; W. J. Campbell, Mt. Union.

Indiana County Society—A. T. Rutledge, Blairsville; B. F. Coe, Clymer; G. E. Simpson, A. H. Stewart, Indiana; W. Johns, Wilkinsburg (Alle. Co.)

Jefferson County Society—S. M. Free, Dubois (Clear. Co.)

Juniata County Society—B. H. Ritter, McCoysville.

Lackawanna County Society—F. L. VanSickle, Olyphant; W. R. Davies, I. N. White, Scranton.

Lancaster County Society—C. R. Farmer, Lancaster.

Lawrence County Society—J. Foster, R. G. Miles, S. W. Perry, New Castle.

Lehigh County Society—C. D. Schaeffer, Allentown.

Luzerne County Society—H. B. Gibby, S. P. Mengel, E. L. Meyers, Wilkes-Barre.

Lycoming County Society—J. W. Albright, Muncy; G. B. Klump, Williamsport.

McKean County Society—E. O. Kane, Kane.

Mercer County Society—G. H. McKinstry, Aspinwall (Alle. Co.); C. W. McElhaney, B. E. Mossman, Greenville.

Mifflin County Society—W. H. Kohler, Milroy.

Montgomery County Society—J. K. Weaver, Norristown; J. E. Gotwals, Phoenixville (Chester Co.)

Northampton County Society—W. P. Walker, South Bethlehem.

Northumberland County Society—G. W. Reese, Shamokin.

Philadelphia County Society—J. M. Baldy, M. Behrend, J. B. Deaver, G. M. Dorrance, C. H. Frazier, L. J. Hammond, A. Heineberg, W. Krusen, E. Laplace, C. B. Longenecker, D. R. MacCarroll, E. Martin, E. E. Montgomery, P. G. Skillern, Jr., W. S. Wray, Philadelphia.

Somerset County Society—F. E. Sass, Boswell; G. B. Masters, Rockwood.

Venango County Society—L. E. McBride, Franklin; J. F. Davis, F. M. Summerville, Oil City.

Washington County Society—D. D. Haines, Allenport; C. L. Harsha. J. C. Kelso, Canonsburg; J. H. Wilson, Daisytown; L. W. Hoon, R. V. Stewart, C. B. Wood, Monongahela; J. C. Knox, R. S. Parry, R. A. Stewart, W. P. Teagarden, A. E. Thompson, Washington.

Westmoreland County Society—R. E. L. McCormick, C. E. Taylor, Irwin; T. P. Cole, Greensburg; M. E. Griffith, E. B. Sloterbeck, Monessen; J. L. Burkholder, M. W. Horner, F. L. Marsh, W. A. Marsh, Mt. Pleasant; J. M. Reed, Pittsburgh (Alle. Co.)

York County Society—W. F. Bacon, York.

SECTION ON EYE, EAR, NOSE AND THROAT DISEASES

Allegheny County Society—W. F. Ross, Aspinwall; A. S. Sigman, Bellevue; E. H. Sloan, Ben Avon; J. P. Egan, D. A. Metzgar, Braddock; A. Hunter, McKeesport; G. T. Lamon, New Kensington (Westm. Co.); C. F. Bernatz, W. W. Blair, W. E. Brown, C. I. Buvinger, W. E. Carson, G. E. Curry, J. S. DeMuth, B. M. Dickinson, J. L. Duncan, N. A. Fischer, D. W. Frye, J. E. Gross, A. J. Guerinot, J. A. Hagemann, A. R. Hampsey, E. B. Heckel, S. F. Hogsett, W. H. Kirk, G. C. Kneedler, A. Krebs, J. G. Linn, C. E. McKee, A. A. MacLachlan, J. C. Markel, W. Marshall, R. Milligan, T. J. Moran, J. F. Murdoch, E. L. Neff, C. K. Owens, E. J. Patterson, D. M. Perkins, S. Seegman, T. M. Stahlman, C. J. Steim, E. Stieren, G. W. Stimson, S. A. Sturm, M. C. Taylor, H. H. Turner, F. J. Walz, N. J. Weill, E. S. Weimer, E. A. Weisser, E. E. Wible, J. E. Willetts, C. A. Wishart, Pittsburgh; C. S. Orris, Tarentum.

Armstrong County Society—D. I. Giarth, Ford City; J. B. F. Wyant, Kittanning.

Beaver County Society—W. C. Meanor, Beaver; L. S. Townsend, Beaver Falls.

Blair County Society—S. P. Glover, Altoona.

Bradford County Society—C. L. Stevens, Athens; N. S. Weinberger, Sayre.

Butler County Society—L. Leo Doane, L. R. Hazlett, Butler.

Cambria County Society—S. S. Kring, Johnstown.

Carbon County Society—C. J. Kistler, Lehighton.

Center County Society—J. L. Seibert, Bellefonte.

Clarion County Society—C. L. Clover, Knox.

Dauphin County Society—C. S. Rebuck, Harrisburg.

Delaware County Society—G. H. Cross, Chester.

Fayette County Society—O. R. Altman, Uniontown.

Huntingdon County Society—W. H. Sears, Huntingdon.

Indiana County Society—E. Onstott, Saltsburg; W. E. Dodson, Indiana.

Jefferson County Society—A. F. Balmer, Brookville; J. A. Newcome, Vandergrift (Westm. Co.)

Lancaster County Society—J. P. Roebuck, E. J. Stein, Lancaster.

Lawrence County Society—D. C. Lindley, New Castle.

Luzerne County Society—L. H. Taylor, Wilkes-Barre.

Lycoming County Society—W. F. Kunkle, Williamsport.

Northumberland County Society—L. E. Schoch, Shamokin; H. M. Becker, Sunbury.

Philadelphia County Society—C. P. Franklin, Allentown (Lehigh Co.); T. R. Currie, C. C. Eves, L. Fisher, C. Jackson, J. C. Keeler, W. C. Posey, B. A. Randall, A. R. Renninger, E. A. Shumway, E. L. Vansant, G. B. Wood, Philadelphia; G. H. Shuman, Pittsburgh (Alle. Co.)

Schuylkill County Society—G. R. S. Corson, Pottsville.

Somerset County Society—C. P. Large, Meyersdale.

Venango County Society—G. B. Jobson, Jr., Franklin.

Washington County Society—F. C. Stahlman, Charleroi; M. H. Day, Donora; H. P. Lynch; Monongahela; G. B. Dunkle, J. B. McMurray, Washington.

Wayne County Society—E. O. Bang, S. A. Bang, South Canaan.

Westmoreland County Society—L. M. Mitchell, Pricedale; M. H. Smithgall, Export; E. M. Clifford, Greensburg; W. P. Gemmill, Monessen.

York County Society—A. M. Grove, J. F. Klinedinst, York.

SECTION ON PEDIATRICS

Allegheny County Society—H. J. Benz, H. B. Burns, P. J. Eaton, O. M. Edwards, Jr., T. J. Elterich, J. K. Everhart, H. M. Fink, W. W. McFarland, J. Z. Mase, M. A. Naylor, J. L. Robertson, G. S. Schoyer, Z. R. Scott, Pittsburgh.

Beaver County Society—J. D. Stevenson, Aliquippa; H. B. Jones, Woodlawn.

Berks County Society—H. P. Brunner, Reading.

Blair County Society—R. J. Hillis, Altoona.

Bradford County Society—C. M. Coon, Athens.

Cambria County Society—H. J. Cartin, Johnstown.

Dauphin County Society—C. E. L. Keen, Harrisburg.

Elk County Society—J. C. McAllister, Ridgway.

Fayette County Society—H. E. Hall, Uniontown.

Huntingdon County Society—J. M. Keichline, Jr., Petersburg.

Lackawanna County Society—H. W. Albertson, Scranton.

Lehigh County Society—F. R. Bausch, Allentown.

Luzerne County Society—C. H. Miner, Wilkes-Barre.

Lycoming County Society—R. K. Rewalt, Williamsport.

Montgomery County Society—H. A. Bostock, W. R. Roberts, Norristown.

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THE PENNSYLVANIA MEDICAL JOURNAL
Official Organ of the Medical Society of the State of Pennsylvania

VOLUME XXI
NUMBER 3
ATHENS, PA., DECEMBER, 1917
SUBSCRIPTION:
$2.00 PER YEAR

ADDRESS

REPORT OF TWO CASES, SARCO-ENDOTHELIOMA

(PLEXIFORM ANGIOSARCOMA)*

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AND
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WILKINSBURG

The classification of tumors of the serous membrane is so mixed and the bibliography is so scant that cases that may be added to the existing literature of the subject are of particular interest.

The blood vessels, lymph vessels, peritoneum and other serous membranes arise from the mesoblast, which is formed at a later stage in embryonic development than the hypoblast and epiblast. However, some biologists claim that it is formed directly from the primary layers, which no doubt accounts for the confusion in the histologic classification. As endotheliomata assume, at times, a distinctly alveolar type they closely resemble a carcinoma; hence, the old name of endothelial carcinoma. Zeigler classifies some of this type as peri-endotheliomata on account of the massing of cells around the plexiform vessels. They are usually of the small round cell type with a profusion of blood vessels with imperfectly developed walls, giving rise to another name, plexiform angiosarcoma.

Endotheliomata occur in the arachnoid and pia mater, and usually in serous surfaces, but have been observed in the viscera, bone, mamma and subcutaneous tissues; the parotid neoplasm, known as mixed tumor, is often if not always an endothelioma.

The two cases here reported are characterized by extreme malignancy and hemorrhagic tendency. They both occur in Scarpa's triangle and in adults of about the same age.

CASE 1.—J. J. H., aged 47, American, was an auto salesman. There was no tumor history in family. Wassermann test was negative; patient always had been robust. In May, 1916, he was struck on thigh by the crank of an automobile, midway between knee and groin. Injury was slight as he continued to run machine some 60 miles after accident.

In July he noticed swelling over point of injury; there was no pain. When first examined by author August 31, the left thigh was about twice the circumference of the right. A tense fluctuating swelling extended from about 6 inches above knee to 2 inches below Poupart's ligament. There was no bruit or pulsation; aspiration with small needle allowed blood to escape under great tension. Roentgen-ray examination showed no bone involvement. A diagnosis of ruptured aneurysmal varix was made at this time. September 1, an incision was made from 2 inches below Poupart's ligament to 2 inches above knee. A large cavity with walls made up of muscles was evacuated of one-half gallon of grumous blood and partially organized clots.

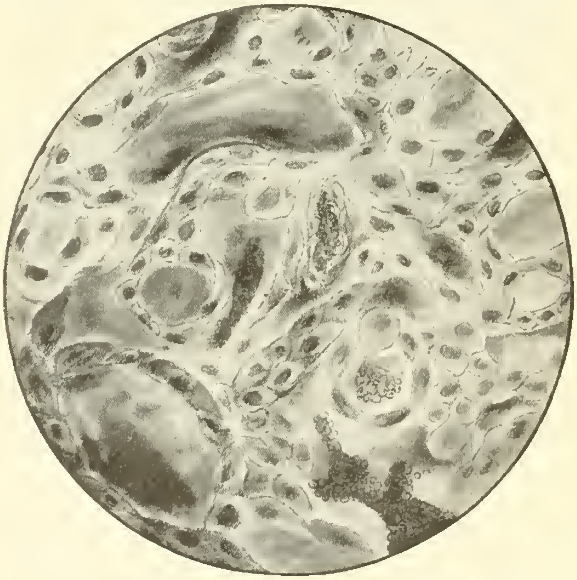

Fig. 1 (Case 1).—J. J. H. Reproduction of microscopical section.

There was no arterial bleeding and the only pathological condition apparent was what appeared to be ruptured veins in the base of the cavity. The periosteum was normal. The cavity was obliterated by mattress suture; the wound healed by first intention, the patient leaving the hospital at the end of two weeks.

Four weeks after original operation the cavity again filled, was aspirated several times and pressure by sand bags applied, with no influence on the formation of the hematoma. At the second operation the walls of the hematoma were mattress-sutured with kangaroo tendon, the femoral artery and vein were exposed for 12 inches and hemostasis was absolute before closing wound. Leg and thigh were placed on a posterior splint for four weeks. Incision healed by first intention but five weeks after operation the thigh became swollen as before. After consultation with Dr. J. J. Buchanan it was decided again to open the cavity and pack with gauze, allowing same to remain in wound for several days. The walls of the cavity were at this time thoroughly cauterized with soldering irons and the wound packed with 9 yards of gauze. At the end of the ten days the clot formation had shoved the gauze out of the opening. After this operation the report from the pathologist was sarco-endothelioma. The thigh was then amputated at the hip joint under spinal anesthesia as the patient's red cell count at this time was 1,500,000 and hemoglobin 30 per cent.

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* Chairman's address to the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

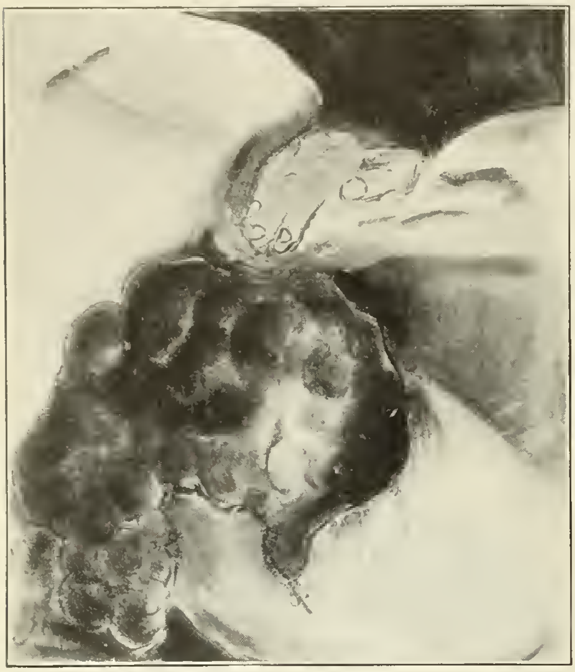

Fig. 2 (Case 1).—J. J. H. Photograph of stump four weeks after recurrence in stitch holes.

Blood was transfused at three sittings, his sons acting as donors. The amputation stump healed beautifully but in three weeks fungus growth was noticed at each stitch hole and the stump rapidly burst open from the new growth. Roentgen ray treatment was established early in the case by Dr. Russell H. Boggs, but had no control of the growth. Coley's fluid was used the last month, the patient succumbing April 30.

Case 2.—A. C. B., aged 43, railroad supervisor, father of six children, had had no previous illness or history of injury. Wassermann test was negative. About one year ago he noticed swelling in left groin about the size of a walnut. There was no pain or tenderness. When seen March 1, 1917, by author the swelling was the size of a hen's egg, and was clinically typical of incarcerated femoral epiplocele. Operation was advised but refused at that time. Growth thereafter was more rapid and in June there was a sudden enlargement due no doubt to hemorrhage into tumor, with great pain radiating down thigh. The tumor was about the size of a half cocoanut, and fluctuated but with no bruit or pulsation. Roentgen-ray examination showed no bone lesion. At operation, a linear incision over Poupart's ligament and down thigh exposed a pseudocystic condition with clots and débris as in previous case. A mass over the femoral ring was removed, which proved to be omentum which had undergone degeneration. Hemorrhage was excessive. The hematoma was cleaned out and the wound packed with several yards of gauze. The growth lay directly above the femoral vessels. Recovery from operation was uneventful.

Pathological report was sarco-endothelioma of the round cell variety. The deduction is that it arose from the peritoneum covering the omentum.

Intensive roentgen-ray treatment has been given since June with the result that the growth and induration has not extended at present writing. Coley's fluid has been used since September 1, beginning with ¼ minim and gradually increased to 5 drops when the reaction became so severe that it was discontinued. At the present time induration can be felt above Poupart's ligament.

DR. WALLGREN'S REPORT ON PATHOLOGICAL FINDINGS

The drawing representing the microscopic slide of the first case reported, together with the second, was prepared with the aid of a camera lucida and then later enlarged by an enlarging apparatus, so that it is practically a true picture of the slide. The stain coloring is also reproduced as nearly as it is possible to do so. In the first case, the endothelioma evidently appeared from capillary loops. In that type, the endothelial cell is of the investing variety; that is, the type of endothelial cell which makes an attempt to grow over a surface of any kind. In gross appearance, the mass was not unlike mixed masses of flesh and blood clot. That part of the mass resembling blood clot was organized and the masses which resembled flesh were made up of endothelial cells. The tumor was very rich in its blood supply.

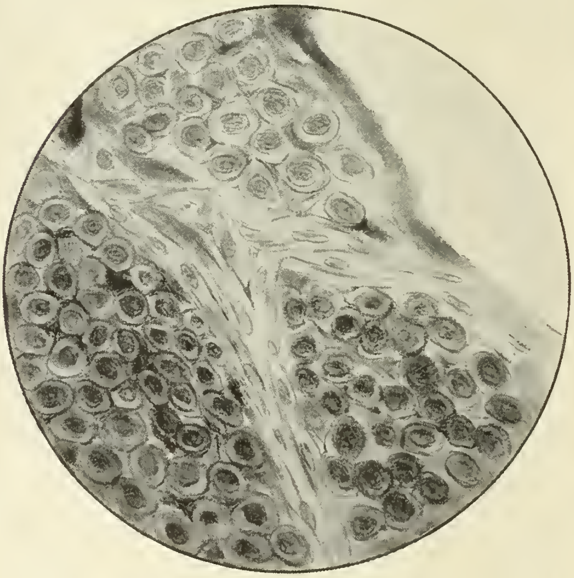

Fig. 3 (Case 2).—A. C. B. Reproduction of microscopical section.

The second case, the last drawing, differs somewhat in that the cells seem to indicate their origin to be from the serous lining of the peritoneum. The round cells resembled somewhat those of lymphatic tissue. In gross appearance, the tumor was not very rich in blood supply. In fact, it was only here and there that you could find any blood capillaries whatever. The tissue mass was mainly acini, filled with endothelial cells and a stroma of fibrous tissue, the base of which came, evidently, from the greater omentum.

The difficulty in the classification of these tumors is due to the fact that they sometimes resemble sarcoma cells and sometimes carcinoma. This is due to the fact that the mesoderm is supposed to be formed from both the ectoderm and endoderm. In the low type of animals, through which we are supposed to have come, the mesoderm is formed from the ectodermal cell. It may, therefore, take on the characteristics of the cells of the epiblast. The mesoderm splits up into three layers. One forms the mesothelial, one the mesenchymatous, and the other the mesameboid layer. The mesothelial layer, resembling epithelium, forms the lining of the serous membranes, such as the pericardium, the pleura, and the peritoneum, and also furnishes part of the lining of the genito-urinary tract, and forms the striated muscles. The second layer, the mesenchymatous, forms connective tissue, lymphatic organs, spleen, and the cells called endothelial cells which line the vascular and the lymphatic systems. It also forms the smooth muscles and bone marrow. For this reason, they may, under certain conditions, resemble carcinoma and, under certain other conditions, sarcoma, depending upon their reversion to that particular cell which represents the cell from which they were derived.

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ORIGINAL ARTICLES

PYELITIS COMPLICATING PREGNANCY *

HAROLD A. MILLER, M.D.
PITTSBURGH

While it is true that pregnancy is a normal physiological process, it is nevertheless just as true that the mere presence of a pregnancy predisposes the individual to certain ailments that occur primarily because of the presence of the fetus in the uterus.

It had long been recognized that the kidney is especially liable to numerous complications at this time in the woman who in the nonpregnant state has shown no evidence of kidney impairment.

The entire subject of what we roughly speak of as the kidney of pregnancy could not be discussed in the limited time alloted to this paper. We therefore exclude all inflammatory or suppurative conditions of the kidney which were present before pregnancy and their activity simply renewed or emphasized by the pregnancy, confining ourselves to the purely clinical consideration of cases in which a pregnancy occurs in the individual with a perfectly healthy kidney and as a complication has an acute suppurative inflammation in the pelvis of one or both kidneys or in the upper part of the ureters during the course of gestation.

FREQUENCY

I am not aware of reliable statistics which give us definite information regarding the frequency of pyelitis in the pregnant woman. It is sufficient to say that it is relatively infrequent, as only one case of original jurisdiction has occurred in my practice during the past two years. Seven others have been seen in consultation.

Pus in the urine is found in about 6 per cent. of all pregnant women, but the large majority of these manifest no symptoms, and in all probability it is due to local bladder inflammations.

CAUSES

If we accept the fact that pyelitis is more frequent in the pregnant woman than in the nonpregnant we must necessarily have as a predisposing cause some condition due essentially to pregnancy. This we have in the obstructive dilatation of the kidney pelvis and ureters which is present in pregnant women as shown by all pathologists who have investigated this subject. This dilatation of the kidney pelvis and ureter in pregnant women is due to pressure caused by the enlarged uterus.

It is theoretically possible that the necessary excretion of toxic substances by the kidney of the pregnant woman also lowers the resistance of the kidney pelvis and ureters. These conditions considered separately or combined could not in themselves cause an acute suppurative inflammation in a previously healthy kidney pelvis or ureter.

It does, however, produce a fertile field for the growth of bacteria which have gained entrance from an infected bladder during the time when the obstruction was only partial, or a time when the obstruction was temporarily relieved by change of posture and after the pressure had existed a sufficient length of time to have caused some dilatation of the ureters and some obstruction to the floor. To this theory, we must at

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* Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

least give the respect due to age, and in this way account at least in part for the increased frequency of this condition in the pregnant woman and especially as this complication arises with increasing frequency during the latter part of pregnancy when the pressure is greatest.

In addition to this method, we have infections by the ascending lymphatics and by the blood stream. The hematogenous route of the infection is denied by no one, and the frequent capture of the cocci concerned in the blood stream has put on the defensive all other methods of infections. A well-recognized function of the renal parenchyma and especially the convoluted tubes is to remove bacteria from the general circulation. This filtering of the bacteria in no way decreases the virulence of the organism or prevents an excessive dose of bacteria entering the kidney pelvis and ureter at a time when their resistance had been lowered by a possible toxemia and the presence of stagnant, irritating urine.

It would be a delightful simplification of the prophylaxis of pyelitis if we could definitely prove that there is but one method of bacterial invasion, but viewing the matter from the broadest clinical point of view, we cannot admit any one method of occurrence to the exclusion of others.

SYMPTOMS

The diagnosis of pyelitis is relatively easy in the uncomplicated case, even in presence of pregnancy. The onset is usually sudden with a negative previous renal history. Pain is an almost constant symptom and in a large number of cases is at first thought by the patient to be beginning labor pains. They are intermittent, cramp-like in character, and careful examination will usually suggest that the kidney is the point of maximum intensity. The pain usually radiates down along the course of the ureter and may be accompanied by vesicle tenesmus. In palpating the abdomen in the interval between pains the uterus will be soft and remain so even after the beginning of the pain in contradistinction to uterine cramps in which the contracting uterus will be felt some time before the patient complains of pain and while the abdominal muscles remain soft. The kidney involved can usually be palpated.

The temperature elevation will depend upon the severity of the infection, in some of my cases having reached 104 F.

Blood examinations give us but little information in differentiating it from appendicitis and other acute inflammatory conditions of the abdomen. In several cases we have had a leukocytosis of 15 to 1,800. Blood pressure is normal. This fact assists us in differentiating it from impending eclampsia.

Albumin and pus cells are usually found in the urine, although their absence is not conclusive; it is being accounted for by a complete obstruction to the ureter on the affected side.

In cases where a positive diagnosis is otherwise impossible ureteral catheterization will at times demonstrate an obstruction in the affected ureter where it exists and should always secure a murky pus-laden urine, culture of which should reveal the causative organism.

TREATMENT

The treatment varies according to the severity of the condition. Drugs, posture, ureteral catheterization and relief of obstruction by the emptying of the uterus all have their place in the therapy of this condition. In the milder cases or while waiting to arrange for other treatment the administration of large doses of urotropin may be tried. I feel that less than a dram of urotropin daily can hardly be expected to materially influence the infection. In addition it must be remembered that free drainage of the kidney is essential, and for this the foot of the bed may be elevated or the patient turned on the unaffected side. If the obstruction is caused by pressure alone this may permit of drainage and give relief. If, however, the obstruction is caused by an inflammatory swelling of the ureteral mucosa it will seldom give relief.

In cases where the pyelitis has existed for some time the obstruction is at least partially caused by the swollen mucosa as demonstrated by the cystoscope, and relief can then be obtained only by the passing of a urethral catheter.

There is no essential reason why we should hesitate to relieve the engorged ureter and kidney pelvis of its pussy contents and establish drainage. It may be done without pain and in all cases where the condition has not involved the kidney substance is followed by relief and in many cases by a cure. It affords an opportunity to secure and identify the organism present and have an autogenous vaccine made. Vaccines are of benefit if, in the occasional case where the kidney and ureter is draining freely, it may be necessary to permit the catheter to remain some days or weeks; in one of my cases catheter drainage was continued for six weeks, the catheter being removed only in the beginning of labor. Some months later a report from the patient's physician assured me that the patient's recovery had been complete. Lavage of the kidney pelvis will be necessary less frequently when drainage is continued.

In some instances it may be advisable to empty the uterus by the premature induction of labor, remembering that to do so we have to enter the uterus through an infected field with its consequent dangers. In times past this was the recognized method of treatment in the severe and resistant cases, but the necessity of doing so has undoubtedly been decreased if not entirely removed by the use of a retention ureteral catheter.

SUMMARY

Pyelitis occurs with sufficient frequency in pregnant women to warrant its consideration when symptoms suggesting its presence are found.

A good hygienic life, a normal resistance, and freedom from pus pockets at the roots of teeth, in tonsils, etc., are the only prophylactic measures known.

Drug and postural therapy should always be instituted as soon as the condition is suspected.

Ureteral catheterization should immediately follow any failure to get relief by the simpler method.

Vaccine therapy in some cases seems to be of benefit after drainage has been established.

Induction of labor may at times be necessary, but the increased danger due to the infection present should be kept in mind.

219 Sixth Street.

DISCUSSION

DR. ELMER L. MEYERS, Wilkes-Barre: I have recently become very much interested in the subject which Dr. Miller has so well presented to us. Not much has appeared in medical literature on the subject of pyelitis during pregnancy, until in recent years. Whether this has been due to a lack of interest or knowledge of the condition, or whether it was not considered of sufficient importance to give this complication the consideration which it properly deserves, is still a question.

That pyelitis is comparatively rare in pregnancy is undoubtedly true. That a great many cases have been unrecognized at the time of the disease is also very evident. Authorities differ as to the frequency in which pus is found in the urine, ranging from 6 to 15 per cent., and that about one case in 600 pregnant women have pyelitis. Only where repeated microscopical examinations are made of the urine are the milder cases discovered in the incipient stage.

No doubt the vast majority of these infections, according to reports from investigators, are caused by the colon bacillus. This, then, would emphasize the importance of keeping the internal organs free from the accumulation of putrescible material as to allow the organs properly to functionate during the entire period of pregnancy.

If the bowels are sluggish it is proper to keep them active by means of diet and drugs. If, as so aptly suggested, the teeth, pyorrhea, or large, boggy infected tonsils are a plausible source of infection, then it should be a routine practice to have these attended to in the same manner as we examine the urine.

If the symptoms are of a local character, pain in the back, in the region of the kidney following the course of the ureter, together with an irritable bladder with all other signs of infection, then, as Dr. Miller says, the diagnosis is easy. But if these symptoms of acute infection with chills, fever and extreme prostration, the condition so vague in symptoms that pains are general, simulating influenza, or localized in the upper abdomen or chest from pressure against the liver and gallbladder or against the diaphragm, when the pain is accompanied with dyspnea, it is not improbable to make a diagnosis of pneumonia, or, when the greatest discomfort is experienced in the lower abdomen, one may be led to make a diagnosis of appendicitis or stone in the kidney. I say, if these symptoms prevail the skill of the keenest diagnostician may be put to a test.

If, however, the urine be examined, as a rule, pus will be found if there be no occlusion or obstruction of the ureter. If there be obstruction due to congested mucosa of the ureter or thick pus, as the essayist has remarked, then catheterizing of the ureter will clarify the situation.

If, however, the pus is too thick to be drained through the catheter, Bryden Glendinning, an English specialist, irrigates the kidney pelvis through the inserted catheter with a saline solution, leaving the catheter in position until the accumulated pus has been thoroughly drained away.

As to the author's treatment, I am in entire accord, except that I might add and emphasize what he no doubt would have said in addition had he not been so limited in time, the importance of diet in these cases as being a prime factor in treatment. Give liquids, especially milk, buttermilk, and the milk-prepared foods, withholding meat, the more indigestible vegetables, fried foods, fats, cheese, vinegar-treated foods, condiments, mustards, peppers, salts, etc. Encourage the patients to drink, systematically, a large amount of plain mineral or lithia water daily, and if the urine be acid, potassium bicarbonate or citrate of sodium or potassium should be given. Hexamethylenamine, if administered for a period of a week or even less time, may set up an irritation of the kidney sufficient to cause blood to appear in the urine, thus aggravating the primary condition. Salol and methylene blue have been advocated.

As to operative interference, this should be advocated with considerable hesitation and would require fine judgment. After diet and drug treatment, postural drainage and catheterization, we still have recourse to a choice of nephrotomy, nephrectomy, or the induction of labor. While it is true that the pregnant women will stand a major operation surprisingly well without, as a result, falling into labor, it likewise is a matter of record that very many pregnant women so operated on promptly fall into labor and these patients have their lives doubly jeopardized.

It would seem safer for the life of the patient to induce labor than to take the added risk of labor following as severe an operation as nephrectomy. I am aware that the latter procedure has been strongly endorsed by many good surgeons, if all reasonable medical measures have been tested and failed to secure results. If drainage, postural or with the catheter, for a period of a few weeks has failed to improve the condition, and if the patient is near to term, then, to induce labor would seem the rational mode of procedure.

Dr. William P. Walker, South Bethlehem: If I understood Dr. Miller, he said he kept a ureteral catheter in place about six weeks. This reminds me of a case I saw about five months ago. After studying for a couple of days and catheterization of the ureter I found staphylococcic infection, the right side being the worst. We used urotropin and methylene blue. I never thought of keeping a ureteral catheter in position. The patient got no better. She left the hospital and I kept track of her condition during the remaining five months of her pregnancy. Her urine showed it was not getting materially worse and confinement took place four days ago, at which time I turned her over to an obstetrician. If possible to put in a ureteral catheter and retain it for drainage purposes for any such length of time I am glad to know it.

Dr. Miller, closing: In answer to Dr. Meyers I make it a practice to have all my patients go to their dentist. The dentist treats the pyorrhea, which we recognize as a threatening complication of pregnancy. I feel that we have pus cavities at the roots of teeth that occur at the time of pregnancy, and after delivery I have the patient go to her dentist and have some of the teeth extracted. I modified my saying that the diagnosis is relatively easy. If the patient is quite severely sick there is contraction of the uterus, etc., but when there is pain around on one side of the abdomen which is due to pyelitis, if you have seen the case early, you will find that the abdominal muscles remain soft or the uterus remains soft after the abdominal muscles are hard and firm. This is exactly the opposite from what occurs in labor. The uterus hardens up before the patient complains of pain. After that the abdominal muscles and all ultimately contract. The most difficult thing from which to distinguish it would be a stone in the kidney.

Prompt treatment is necessary to prevent abortions. I am not in favor of anything but palliative measures in early treatment. I am in favor of postural drainage, urotropin and large quantities of water while we are getting ready to catheterize the ureters. I am not in favor of waiting days and days. I feel that the patient will never recover from pyelitis until there is free drainage. Free drainage is essential to recovery of any person who has pus in any part of the body. Urotropin and alkalines may be used. I did not mention this and am grateful to Dr. Meyers for this. Acid urine is cause for alkalines instead of urotropin. Do not use urotropin unless in large doses, at least one dram. I always try to use drugs with sufficient dosage to give us the result and promptly if we are going to get it. If we do not get it then we will have to give something else. If there is anything I want you to avoid doing it is the induction of labor in these cases. I think it is most hazardous. In nearly every instance I had a mild degree of infection and in one case I had infection that gave me grave concern for some weeks. I think it is impossible to produce a sterile vagina in the presence of a pyelitis.

PYELITIS *

ROBERT K. REWALT, M.D.
WILLIAMSPORT

In discussing this subject one is led to wonder whether the term pyelitis is comprehensive enough to include those cases in which there has been involvement other than that of the pelvis of the kidney. That disease of the kidney and bladder may exist coincidently with disease of the renal pelvis in many cases, no one questions. However, we will confine ourselves to the term pyelitis giving due consideration to the words having a somewhat similar meaning.

This disease has a great deal of interest for the physician devoting himself either partially or totally to the care of infants and young children. Fischer[1] states that the condition is rarely seen in practice. I do not believe the majority of pediatrists are of this opinion. Certain it is that pyelitis is far more frequent than was formerly thought. Many cases in the past have been diagnosed malaria and gastro-intestinal disease. The reason for these mistaken diagnoses has been a lack of routine urine examinations. Personally, I am convinced that the more carefully the urine is examined in infants and young children, the more cases will be brought to light.

Etiology. — Pyelitis is an infectious disease caused by micro-organisms. By far the most frequent causative factor is the colon bacillus. Other germs occasionally found are the staphylococcus, streptococcus, diphtheria bacillus and tubercle bacillus. The mode of infection has been the subject of much controversy on the part of different observers. There are three routes through which the infection must travel: (1) By the blood, (2) by the lymph, and (3) by the urine. Smith[2] believes that there is sufficient evidence to show that pyelitis is always a blood infection and that bacteria frequently gain entrance to the blood by the lymphatics. Crabtree[3] found the colon bacillus in the blood of seven out of nine patients who developed pyelitis under observation. The blood infection was always early in the disease, disappearing later on. One of the chief objections to this mode of infection has been that although the disease occurs frequently, and many cases have been reported in literature, there are comparatively few reported cases in which it has been possible to isolate the organisms from the blood stream. Cabot believes that failure to isolate the germs is due to the fact that blood cultures are made too late in the disease; that, in order to demonstrate the organisms, cultures must be taken within six hours after the onset. This method of procedure is scarcely practical for obvious reasons.

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* Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

1. Fischer: Diseases of Infancy and Childhood, F. A. Davis & Co.
2. Smith: Am. Jour. Dis. Child., September, 1916, xii, 235.
3. Crabtree: Lancet Clinic, 1916, cxv, 96.

The general consensus of opinion among most of the investigators of the present day is that the lymphatic system is undoubtedly the favored route by which infection travels. Franke[4] has shown by careful dissection of the lymphatics of the large intestine a direct connection with the lymphatics of the right kidney. Bauereisen[5] has proved that a direct connection exists between the bladder and the kidneys through the peri-ureteral lymphatics. Sweet and Stewart[6] proved experimentally that when the ureters were ligated and sewed to the intestinal wall, if infection of the kidneys occurred, it was through the peri-ureteral lymphatics and not through the mucous membrane of the ureter. Eisendrath and Kahn[7] in a preliminary report of twenty-seven experiments on dogs and rabbits, showed that infection traveled from the bladder to the kidneys and perinephritic tissue by way of the lymphatics in the wall of the ureter and not along its mucous membrane. The female genital organs, with the close proximity of the urethra, vulva and vagina to the rectum, and the semiclosed character of the parts, offer every advantage to the entrance and growth of bacteria.

To see whether this region was a possible source of infection, Smith[2] made seventy-one cultures from the urethra, vulva and vagina of forty infants and young children. One infant six hours old and all over eighteen hours old, except one infant six days old, showed a growth from the vagina. All the vulval and urethral cultures were positive. The first organisms to appear were staphylococci and streptococci, then small bacilli—not colon. The colon bacilli were found in the vaginas of infants as early as the fifth day. Thus, notwithstanding the opposition to the ascending theory of infection whether through the lymphatics or through the lumen of the ureter by reflux from the bladder, clinical facts as well as anatomical and pathological experiments support the theory. The facts that there are four cases in females to one in males and that the infection is largely caused by the colon bacillus, lead one to believe that this theory is the most likely one.

Although direct ascending infection by the urine through the lumen of the ureter has been a matter of doubt, some experiments have been carried out which, at least, merit attention. Kretschmer[8] says it has been proved that under certain conditions an antiperistaltic movement may take place in the ureter, so that the contents of the bladder may be propagated into the kidney, and that a partial filling of the bladder is sufficient to dissipate the closure of the ureteral orifice, so that each variation in the intravesical pressure is transmitted to the renal pelvis. This work was done on the lower animals. Kretschmer was able to demonstrate the occurrence of this phenomenon in the human by injecting a solution of thorium nitrate into the bladder and obtaining roentgenograms. In this way it was possible to demonstrate that regurgitation of the fluid from the bladder into the kidney pelvis does occur in man. In three cases out of twelve in children, he was able to show a reflux from the bladder into the ureter.

Pyelitis may be primary or secondary. While the great majority of cases are secondary to gastro-intestinal disease, there have been cases reported which have followed otitis media, tonsillitis, diphtheria, measles and pertussis. A primary attack, which was at the outstart a severe pyelonephritis is well illustrated by the following case.

CASE 1.—P. L., male, born Oct. 30, 1914. His previous history is interesting in view of subsequent events. Child weighed 5 pounds at birth and was a bad feeding case. On Schloss whey modified milk, the infant thrived satisfactorily until 5 months old when he had an attack of influenza. This was followed by a double otitis media. One ear cleared up satisfactorily, but the other one continued discharging. A culture showed staphylococcus albus and aureus together with the colon bacillus. As no results were obtained by aural irrigations an autogenous vaccine was used. Adenoids were removed with only temporary benefit. After six months, during which time the ear continued to discharge, a complete enucleation of tonsils was done. After this the ear ceased to discharge in eight days and has since been perfectly normal. During the following year, the child enjoyed fairly good health. On Nov. 17, 1916, the child was taken suddenly ill while playing. He had a chill followed by high fever and was extremely restless. Anorexia was complete, even water being refused. Temperature was 103 F. later going to 105 F. He voided very little urine that day and during the night passed pure blood from the urethra. During the next forty-eight hours there was marked irritability and restlessness, complete anorexia, with almost complete anuria. During this time his temperature was between 105 and 106 F. Some delirium was noted at this time. Under hot packs for kidney secretion with normal salt solutin by rectum and later cold sponges, the temperature gradually came down and the secretion of urine increased. Temperature was normal in two weeks and amount of urine secreted was normal in three weeks. The urine was examined every day, the amount of pus varying from one third to one tenth of the volume of urine. There were numerous red blood cells, granular and hyaline casts at first, which gradually disappeared. Reaction for albumin was negative February 2, and has remained so. At the last examination of urine, June 6, 1917, there was still a few pus cells present. A blood culture was taken on the fourth day of illness which was negative. Cultures from the urine and stained slides of centrifugalized sediment showed pure staphylococcic infection.

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[4] Franke: Mitt. a. d. grenzgeb. d. Med. u. Chir., 1911, xxii, 623. Ibid., 1911, xlviii, 1973.

[5] Bauereisen: Ztschr. f. Gynäk. Urol., ii.

[6] Sweet and Stewart: Surg., Gynec. and Obstet., 1914, xviii, 460.

[7] Eisendrath and Kahn: Jour. Am. Med. Assn., 1916, lxvi, 561.

[8] Kretschmer: Med. Clin. Chi., 1916, ii, 567.

Is there any connection between this last illness and the ear infection? If so, what happened to the colon bacillus? Notwithstanding the fact that no discharge from the ear had been present for one year, it is possible that there was a distinct relation between the otitis and the pyelonephritis.

Pyelitis as a secondary infection to gastrointestinal disease is well illustrated by the following case.

Case 2.—L. I., female, aged 2½ years. Previous to coming under my observation she had been ill four weeks with enterocolitis. During this illness, she had been treated exclusively by osteopathy. Fortunately the child had a trained nurse, who reported to the osteopath that no urine had been voided during the day. He at once brought his nerve-working powers into play, but with no results. When thirty-six hours had passed with no urine excreted, that learned gentleman sadly informed the parents the child would die. The nurse, who thought that a catheter should at least be given a chance, persuaded the parents to call some one else. The catheter was passed and we managed to save 18 ounces of urine, besides flooding the bed. This urine was examined and a culture showed the presence of the colon bacilli. Otherwise it was negative except for a large amount of indican. Her temperature was normal at the time of admission and remained so for four days. The appetite was very poor and the blood count was as follows: red cells 2,400,000, white cells 16,800, hemoglobin 62 per cent.

On the afternoon of the fourth day she had a chill and the temperature shot up to 103 F. The restlessness and irritability were marked. There was complete anorexia and obstinate constipation. The urine, which had been passed very frequently but in normal amounts, was decreased. Examination on first day showed a large quantity of pus, the reaction was intensely acid and a decided ring of albumin. Cultures from urine again showed the presence of the colon bacillus. Temperature continued between 102 and 103 F. for three days when it dropped to normal and remained there. One urine examination at this time showed some hyaline and granular casts, which were not present at subsequent examinations. The child gradually improved and left the hospital in three weeks. However, pus continued in varying amounts for three months, after which the urine was free from it. An interesting feature of this case was the fact that six months after the first attack of pyelitis, she developed grip with marked gastro-intestinal symptoms. Her urine examinations over a period of three weeks showed the presence of pus, which condition gradually subsided, and at the end of five weeks, the urine was normal.

Symptomatology.—The two most important symptoms are fever and pyuria. The range of temperature is from 100 to 106 F. Most of my patients had a chill at the onset. If the blood is examined a leukocytosis will usually be found present. Restlessness and irritability in varying degrees are noted. Prostration is not common, but if the infection is severe and of long standing marked weakness and pallor are found. Anorexia may be present, sometimes to an alarming extent, the child refusing even to drink water. There is no local pain or tenderness.

Diagnosis.—Pyelitis has two constant symptoms as mentioned before, fever and pyuria. Fever does not typify because it is the most frequent symptom in disease. However, routine chemical and microscopical analysis of the urine will usually establish a diagnosis. Often a single urine examination is not sufficient, three or four being required to establish the presence of pus. Albumin is not always found, as in many cases the quantity of pus is not sufficient to produce positive reactions for the tests. When cystitis is associated in addition to fever and pyuria, there are vesical tenesmus and frequent micturition. To differentiate true pyelitis from true cystitis, we should remember that in pyelitis we have an acid urine, many or few pus cells, few epithelial cells and a greater tendency for constitutional symptoms, i. e., fever, chills, restlessness, etc. In cystitis there are more distinct local symptoms, as pain and frequent micturition, and no constitutional ones.

The presence of nephritis is indicated by granular and hyaline casts, red blood cells, and all other signs of the disease. Pyelitis is often confused with malaria, typhoid fever and gastro-intestinal disease. Malaria is to be differentiated by finding plasmodia in the blood and its peculiar type of temperature. Typhoid fever runs a more even and prolonged temperature with a slow pulse, shows a positive Widal reaction and little if any leukocytosis. Gastrointestinal disease in many instances can be differentiated only by the urine examination.

To make an accurate diagnosis, cultures

should be made from the urine. Catheterized specimens should be obtained if possible. Catheterizing the ureters in children is usually impossible, therefore is not to be advised. Cystoscopy has a decidedly limited field and is not practical for the average case.

Prognosis.—This is usually favorable, especially in cases recognized early and treated accordingly. The state of nutrition is a great factor in determining the outcome. Infants suffering from severe gastro-intestinal disease or decomposition have a poor chance to recover. The coincidence or complication of nephritis is an added danger. Just when a case can be pronounced cured is hard to determine. Certain it is that many cases are pronounced cured when they are merely quiescent. No case should be considered cured until the urine remains free from pus and bacteria for six months.

Treatment.—Prophylactic treatment should be carried out by giving strict injunctions to the child's attendant, especially if the child be a girl. The mother or nurse should be instructed to cleanse the child by sponging from the front backward and not in the opposite direction. By doing this, fecal matter will be kept away from the vagina and urethra.

The dietetic treatment of pyelitis is of paramount importance. Sufferers from this disease must be fed or they will die from inanition and exhaustion. Breast milk is an ideal food, but should be given diluted with water. In the bottle-fed, the aversion to food is sometimes so great that gavage must be employed. Large quantities of water are absolutely essential. Enteroclysis in infants and children is most unsatisfactory. Therefore, if water is refused by mouth, it should be given by the stomach tube or even hypodermoclysis. Malt soup has been recommended on account of its alkaline reaction. I have had no experience with this food in the treatment of pyelitis.

Urotropin has been the most generally used drug in this condition and is excellent in acute cases. Given in doses from one to five grains, depending upon the age of the child, four to five times daily with copious draughts of water, it will usually give good results. However, it is most essential carefully to watch the urine for signs of renal irritation and stop the drug immediately in the presence of blood in the urine. Obviously, urotropin should not be used in the treatment of pyelonephritis.

Salol is a useful urinary antiseptic and may be used in the same doses as urotropin, either alone or in combination with that drug.

The alkaline treatment, while much safer, is not quite so efficient. This consists of the administration of sodium bicarbonate (dose 10-30 grains) with potassium citrate (dose 5-10 grains) given every two or three hours until the urine becomes definitely alkaline. When this happens, the doses are gradually diminished and continued for an indefinite period.

Some observers advocate the alternating of these two treatments, i. e., using urotropin with or without the addition of an acid, in large doses for a week, and the next week giving the alkaline treatment: I employed this method in several cases and found it most beneficial.

Pelvic lavage is not practical in infants and young children. Neither have the results of bladder irrigation been encouraging. In fact, where involvement of the renal pelvis exists, either with or without cystitis, irrigation of the bladder is irrational.

With vaccine therapy, I have had no experience whatever. As yet the value of this treatment seems to be very unsettled. Abt[9] has used both autogenous and stock vaccines without seeing the slightest benefit in a single instance. Holt and Howland[10] report that striking results sometimes follow the use of vaccines in obstinate cases. It seems reasonable to suppose that in selected cases of an obstinate type, vaccines should be tried at least.

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DISCUSSION

DR. WILLIAM N. BRADLEY, Philadelphia: What I have to say is prompted not by any great knowledge of the subject but simply by way of emphasizing what Dr. Rewalt has said concerning the occurrence of these cases and the importance of their early diagnosis.

About two months ago a child was brought to me by a physician, the child apparently not very ill. The mother, who is a close observer, stated that the child did not feel well and she thought it was jaundiced. The examination of the blood revealed hemoglobin 63 per cent.; red cells, 2,500,000; white cells, 11,000. The differential count showed 68 per cent. small lymphocytes and 24 per cent. polymorphonuclears; eosinophils were normal, poikilocytosis was noted, and the bacteriologist expressed the opinion that it was a case of pernicious anemia. The examination of the urine showed 30 pus cells to the microscopic field. A diagnosis of pyelitis was made and alkaline treatment instituted, using potassium citrate internally every two hours, day and night, until the urine remained slightly alkaline. The child improved markedly. The pus cells in the urine dropped to 5 in the microscopic field and the blood picture showed hemoglobin 70 per cent.; red cells, 3,700,000; white cells remained as before, while the small lymphocytes fell to 48 per cent., and the poikilocytosis disappeared. The child's general condition is much improved and she is gaining steadily in weight.

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[9] Abt: Med. Clin. Chi., 1917, ii, 895.

[10] Holt and Howland: Dis. Inf. and Child., 1916, 642.

Dr. H. Brooker Mills, Philadelphia: On April 15, 1916, in the *New York Medical Journal*, I reported a case of pyelitis that came into the hospital primarily for abscesses on the dorsum of the hands and feet. The usual routine examination of urine was made on admission, which showed it to be a case of pyelitis. I had the pus from the urine and from the abscesses cultured and in both cases the culture showed the same form of pathogenic bacteria, i. e., the staphylococcus albus. I then had the blood cultured with the same result. An autogenous vaccine was made and administered and some improvement followed its use but only temporarily. Toxic symptoms persisted with accompanying high temperature, and an examination of the nose and throat was made, which disclosed the fact that the tonsils were in a very bad condition. I had them removed and the material which exuded from them cultured with the same results, so that the same form of pathogenic bacteria was obtained by culture from four different places, the tonsils, the blood, the urine and the abscesses. The child immediately improved and has remained free of all symptoms of tonsillitis or toxemia since the tonsils were removed.

We felt that the tonsils must have been the primary focus, from which the disease traveled through the blood to the kidneys, was then carried by the circulation to the hands and feet, and the abscesses resulted.

The report of this case was commented on editorially in the English *Lancet* on May 20, 1916, and the statement made that the editors were very glad to see that some one in the United States thought that pyelitis could come from tonsillitis, because European physicians and surgeons had long maintained that appendicitis often resulted from tonsillitis and this was a very similar condition.

A second case was recently sent to me from Pittsburgh in which the removal of the tonsils was accompanied by the clearing up of the pyelitis.

Dr. Harry Lowenburg, Philadelphia: I was particularly interested when I saw this paper on the program, and I brought with me a chart which represents one of two cases of pyelitis that recently came under my notice. Both cases occurred in males.

One was the child of a physician in Woodbine, N. J., in which there was staphylococcic infection, and this case had been of one year's duration. I think Dr. Graham saw this child at the Jefferson Hospital about a year ago.

The patient whose chart I present is of particular interest. The child came to me from New York City. He was about 32 months of age, and he came under my care, with a high temperature. He had otitis media too, but his urine showed a pure culture of colon bacilli. He had a leukocytosis of 16,000.

I began the treatment with urotropin, and then had autogenous vaccine made, two injections of which were given. The effect on the temperature after an initial rise and on the urine were almost miraculous. Whether or not it was due to the autogenous vaccine I do not know. Several later studies of his urine conducted by my assistant, showed it to be absolutely sterile. Now it is crystal clear, and before it was cloudy and opaque.

The interesting feature is that his leukocytes also dropped from 16,000 to 6,000, making me feel that the infection had been overcome. Before I came away the culture tubes had been in the incubator thirty-six hours, and had remained sterile.

I simply wanted to present these facts. I do not know whether the vaccine or the urotropin accomplished anything. In any event, the case is interesting in view of the fact that it occurred in a male. I saw these two cases in males, probably within a period of a week.

Dr. Rewalt, closing: Since I wrote this paper I have talked to a physician who simply did not know that pyelitis could occur in children. There are also many other physicians who do not seem to know this fact. I would like to emphasize that in every case we are called to see, where there is some temperature of any description whatsoever, it is always advisable to have made a chemical and microscopical examination of the urine.

ACUTE OTITIS MEDIA IN CHILDHOOD *

GEORGE B. WOOD, M.D.
PHILADELPHIA

There was a time, and that not so very long ago, when infections of the middle ear in childhood and infancy were frequently grossly neglected and unwisely treated, thereby not only endangering many lives, but also bequeathing to the present day many unnecessarily damaged or defective ears. However, I believe that now the average general practitioner is very much alive to the possibilities of this condition and is becoming more and more competent in its handling. So much so that I feel somewhat embarrassed in bringing before you this rather trite and somewhat elementary presentation, although the scope of my subject and the limitation of time scarcely permit a detailed discussion. My apology is that the reiteration of fancies and facts, even well known, tend to blaze them on our attention. And because a suppurative condition of the ear in childhood is of such importance, reiteration if it accomplishes only a reimpressing of its seriousness on our minds makes this reiteration worth while.

In considering the importance of otitis media in children we must remember that while it is usually a purely local disturbance, promptly and completely recovered from and that often without medical attention, there is in many cases great suffering and severe illness, and a fatal termination is all too frequent.

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* Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

The amount of constitutional disturbance is dependent upon two things: first, the pathogenicity of the invading bacteria; second, the spreading of the infection from the tympanic cavity to the surrounding structures. If the condition is limited to the middle ear, the local symptoms predominate and there is usually little general depression, yet sometimes high temperature and quite marked prostration occur without demonstrable involvement of the mastoid process or internal ear. For instance, cases with attic involvement are very apt to show considerable constitutional disturbance; also, the infection may spread to the mastoid mucosa with little or no local evidence of this having taken place. Usually, however, involvement of the mastoid process is accompanied by increased systemic toxemia, which may become severe enough to cause serious complications in vital organs. I have seen one case of severe hemorrhagic nephritis, and cardiac and pulmonary lesions are occasionally found. A true bacteremia, however, is rare unless the lateral sinus has been involved.

The seriousness of the middle-ear infection depends very largely upon the local extensions of the disease, not only because of the increased general disturbance, but also because the extension may directly involve vital structures. The most serious and to be dreaded is involvement of the internal ear with resultant meningitis.

The following case I saw some three years ago:

> A child, 5 years old, suffered from an ordinary earache on a Thursday and had only moderate fever and there was no otorrhea. Paracentesis was not done. By Sunday the child was free from pain and the temperature was normal. I saw the child first on the following Tuesday in consultation with the local practitioner, when it presented the clinical picture of general meningitis in an early stage. The mastoid process was opened the same evening with exposure of the dura of the posterior and middle cerebral fossae. The mastoid antrum contained a small quantity of pus but no necrotic areas were found. Lumbar puncture was done the next morning. The spinal fluid was under slightly increased tension, was cloudy and contained pneumococci. The child died one week later.

Although no autopsy was permitted I believe this to be a case of extension of the middle-ear infection into the internal ear, probably through the oval window with subsequent meningeal infection. Fortunately, this extension to the internal ear in ordinary acute otitis media is exceedingly rare.

Involvement of some portion of the mastoid process is probably present in almost every case of severe middle-ear infection, although in the majority the extension does not go beyond the antrum and the case recovers almost as readily as if the middle ear alone was involved. The seriousness of mastoiditis of course depends upon the amount of involvement and the pathogenicity of the infecting bacteria. Again, the amount of involvement is dependent upon the anatomical character of the individual mastoid. The greater the extent of the mastoid cells the more area there is exposed to infection and the smaller the communicating opening between the mastoid cells and the middle-ear cavity the less chance there is for drainage and spontaneous recovery. These anatomical characteristics vary greatly in different individuals and except by the use of the roentgen ray there is no way of determining their relations before the mastoid cells are opened up. Therefore, in the large majority of cases we must depend for our prognosis upon the clinical symptoms presented, both local and general.

Mastoiditis will recover spontaneously by drainage through the middle ear in the great majority of cases; certainly in the cases where the disease is limited to the mucous membrane and even in some cases where the bone itself had become inflamed, provided only that necrosis has not taken place.

If the mastoid condition does not recover spontaneously within a relatively short time there is still a chance that it may clear up after the lapse of several years with a sclerotic solid mastoid as the result. These cases, however, are apt to be followed by a chronic discharge and considerable destruction of the middle ear with varying degrees of deafness and may be the formation of a dangerous cholesteatoma.

Again, the mastoid condition may go on to necrosis of the bone leading to perforation either externally or internally. In young children and infants the very large majority perforate externally with the formation of a subperiosteal abscess. The perforation usually occurs, especially in infants, through the squamomastoid suture, and the position of the swelling accompanying this condition is pathognomonic and is seldom simulated by any other lesion. It is high up almost above the ear and slightly posterior to a line drawn upwards through the external auditory canal. It is rather unusual in infants to find the perforation in any other position.

The seriousness of rupture of the mastoid abscess internally can scarcely be overestimated. The resultant intracranial conditions are extradural abscess, lateral sinus thrombosis, abscess of the cerebellum or temporal sphenoidal lobe, diffuse meningitis or combinations of these conditions. Extradural abscess is seldom fatal if operation is done before other complications arise. Lateral sinus thrombosis, accompanied as it is by general septicemia, shows a large per cent. of mortality, though early operation with ligation or removal of the internal jugular has lowered this per cent. considerably during the last few years. Brain abscess is usually fatal chiefly because of the difficulty of locating the abscess. Diffuse meningitis is almost invariably fatal. Diffuse meningitis, however, is more frequently a complication of labyrinthitis than of simple mastoid disease.

Infections of the middle ear except in cases of trauma always come through the eustachian tube. Such being the case, involvement of the ear is apt to follow any infectious disease which is accompanied by an inflammatory condition of the nose or upper throat. Of the exanthemata, scarlet fever produces the most severe ear lesions, and it is probable that the large majority of cases of residual otitis media of adult life can trace their origin to an attack of this disease. For some reason, the scarlet fever organisms seem to produce rapid destructive changes in the ear not only of the soft tissue, but also of the bone. The frequency of ear involvement after measles is probably as great as after scarlet fever, but the infection is much less vicious and the tendency is toward complete recovery. The otitis of influenza is common and varies in its intensity, but permanent damage to the ear with the resulting interference with function, is exceedingly uncommon, if appropriate treatment has been instituted.

The large majority of infections of the middle ear result from the ordinary coryzas, and the seriousness of the attack depends upon the character of the organisms producing the coryza. There are also a certain number of cases which begin without any recognizable lesion in the upper respiratory tract. Some of these may result from unwise douching of the nose or from an attack of vomiting or coughing which may force bacteria-ladened mucus into the eustachian tube.

Predisposing conditions to otitis media are frequently found in children, usually in the form of some obstruction in the nose or nasopharynx. The most important of these is enlargement of the pharyngeal tonsil, the so-called "adenoids." Enlargement of the faucial tonsils may also interfere with drainage of the eustachian tube by the elevation of the soft palate. Anatomical deformities of the nose, such as deflection of the septum and enlarged turbinate bodies are not common in young children, though occasionally they may be predisposing factors. A certain number of children seem to be especially susceptible to ear infections in which no local predisposing conditions can be found.

The treatment of otitis media in children should be both prophylactic and curative. Prophylaxis is most important and should consist essentially in the establishment and maintenance of a healthy nose and throat. Obstructing lesions, such as enlarged faucial and pharyngeal tonsils or serious intranasal deformities, must be corrected and catarrhal conditions in the nose and throat properly treated. In this connection I would like to state that I am strongly opposed to the use of the nasal douche as a routine measure and especially so when there exists in the upper respiratory tract some infectious conditions such as are found during coryza, influenza and some of the exanthemata. The use of an oily solution containing about one grain of menthol and camphor to the ounce instilled into the nostrils will accomplish more good than the nasal douche and is not productive of harm to the ears. As the nasal mucosa of infants is particularly susceptible to menthol it may be even better to use plain unmedicated petrolatum. In connection with the oil, a weak adrenalin solution of 1-20,000 may be occasionally used to shrink up the turbinal bodies and some mild aseptic powder, such as thymol iodid. may be insufflated to combat an infection.

The most important factor in the treatment of acute otitis media in children is the early recognition of the condition, and frequently this early recognition is neglected because in infants the attention of the physician is not directed to the ear by the patient, as is the case in older children or adults. I believe that every general practitioner should acquaint himself with the method of examining the ear drum and its normal appearance, and that routine examination of the ears should be carried out in infants during any of the acute infectious diseases.

The most important symptom of inflammation of the middle ear is pain, and it is the one which usually calls our attention to the ear. This in babies or young children is manifested according to the severity of the pain by irritability or by intermittent or more or less continued crying. The carrying of the hand to the head is suggestive, but by no means pathognomonic. The pain in the early stages is usually periodic and worse at night. Because pain is one of our most important guides as to the progress of the disease, the use of morphin and like drugs should, as a rule, be avoided. Local remedies which relieve the pain by modifying the local condition should be used instead, and the best of these is the application of heat. This can be used either dry or moist. The hot water bag or hot salt bag will frequently completely relieve pain and almost always alleviates it in the early stages. Moist heat can be best applied by douching the canal with hot water, the temperature varying from 105 to 115 F., according to the tolerance of the patient. Warmed carbolized glycerin, 5 to 10 per cent., may be instilled into the canal, but the use of oily solutions or other substances which are not aseptic or cannot be readily removed should be avoided because of the importance of keeping the canal sterile in case spontaneous rupture of the drum occurs or paracentesis becomes necessary. The nasal fossæ should be kept free and the turbinals contracted in order to promote drainage through the eustachian tube. The application of cocain, by the physician, carried along the floor of the nose to the region of the tubal opening, is not only permissible, but of distinct advantage.

If the pain persists after such treatment it is probable that paracentesis of the drum will be necessary. I believe strongly in early paracentesis if proper care can be given the patient after the drum is opened. When either spontaneous rupture has occurred or paracentesis has been done the middle ear is brought into communication with the canal and strict asepsis must be observed. Secondary infection not only increases the risk of serious mastoid trouble, but is probably the important factor in long-continued discharge. My routine technic consists in the use of thin cotton or gauze wicks tipped with 10 per cent. carbolized glycerin carried well into the canal and removed as frequently as they are soiled. If the wicks cannot be replaced as often as necessary they interfere with the drainage and had better be discarded. If the discharge is tenacious and difficult to remove the cautious use of a sterile boric douche is proper, but in the majority of cases it is well to avoid any manipulation which tends to carry infection towards the middle ear. As a rule, more satisfactory results will be obtained by letting good enough alone than by the display of too much energy on the part of the practitioner. The treatment of acute otitis then is to obtain the best possible drainage and practice strict asepsis to avoid secondary infection.

In regard to the mastoid operations I am inclined towards conservatism. As a general rule, I wait until reasonably convinced that the ear will not otherwise recover without more or less permanent functional damage. The presence of external swelling and tenderness back of the ear and even edema of the posterior wall of the canal with a fair elevation of temperature are not to my mind positive indications for the mastoid operation. The chief indication for operation is a tendency of the disease to progress instead of recovering and it is in this direction very largely that the general practitioner is of distinct aid to the specialist. It is important for the general practitioner to note when the post oral swelling first occurs, when the ear first begins to discharge, the progress of the temperature curve and the amount of pain. In fact, he should be able to furnish the specialist with a detailed history of the progress of the local disease.

After free drainage from the middle ear has been established by a thorough paracentesis of the drum, pain should disappear or gradually become less. The fever should show distinct evidence of lessening within twenty-four hours; there should be a decrease in the swelling, and the tenderness over the mastoid and the leukocyte count should distinctly improve. Often, however, for the first three or four days this improvement is only slight, but as long as there is a tendency to improvement operation on the mastoid should wait. Also, the mastoid symptoms may suddenly increase in severity when the drainage of the ear has been interfered with either as the result of an accumulation of tenacious or partially dried secretion in the canal, from the complete or partial closure of the opening in the drum. Cleaning out of the canal and repeating the paracentesis generally relieves this type of mastoid flare up. If the mastoid symptoms are not too severe the paracentesis may be repeated three or four times without recourse to the mastoid operation. There are certain conditions which of course would lead to immediate operation; for instance, an external subperiosteal abscess, extreme constitutional intoxication or evidence of intracranial involvement. When once convinced that the mastoid operation is necessary it should be done with the least possible loss of time.

Just a word in closing: It is probable that the majority of cases of otitis media in children must be taken care of by the general practitioner. There are a large number of persons who still, in spite of urging by the family physician, refuse to realize the seriousness of this condition, and therefore resent the calling in of a specialist for cases of ordinary earache. Again, perhaps more especially in the country practice, the employment of a specialist is almost impossible except at great expense. Therefore, I believe it the solemn privilege of every general practitioner to take every opportunity to acquaint himself with the methods of examining the ear, with the appearance of the normal and diseased drum, with the local measures necessary to properly care for acute inflammation of the middle ear and, in those communities where specialists are not easily available, with the technic of paracentesis.

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THE COMMON COLD*

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So frequent in occurrence, so commonplace in the lives of most families, so trivial in its effects in the opinion of most laymen, the so-called "common cold" should have, nevertheless, an interest to the pediatrist far greater than it thus far seems to have attained.

The literature of the "common cold" is not at all voluminous, and by far the simplest and best article is that by Rosenau of Harvard, and I shall quote freely from him, perhaps changing his language a little to make it apply particularly to children.

Now children probably suffer more from "common colds" than from any other one ailment, but, though vital statistics give no hint of its prevalence and importance and though morbidity records are notoriously imperfect, could the sum total of suffering, inconveniences and sequelæ be obtained, the "common cold" would be at once classed among the serious diseases.

The "common colds" of childhood are really a group of infections of the mucous membranes of the nose, pharynx, tonsils, larynx, trachea and, at times, of the larger bronchi. A "common cold" is not merely a congestion, it is an infection. "Congestion and inflammation of the mucous membrane of the upper respiratory tract frequently occur as a result of irritants other than bacteria. Thus, chemical and mechanical irritants will produce a congestion or inflammation; an increased acidity causes a flaring up of the mucous membranes, especially of the nose, and many other local and reflex causes lead to acute or chronic catarrhal conditions of these membranes, which may become exquisitely sensitive and sometimes hypersusceptible. In the absence of the proper bacteria, however, these conditions do not develop into infectious colds, and are, therefore, not communicable."

The bacteria most commonly found are staphylococci, streptococci, pneumococci, influenza bacillus and the *B. catarrhalis*. Just which type is the etiologic factor in any given case is not always clear; it must be remembered that many of these organisms are normally present upon the mucous membrane of these parts, and in the crypts of the tonsils; and that from them under certain conditions, reinfections can, and probably do, occur. That these "common colds" are infectious and are readily passed from one to the other, is most apparent from one's observation of epidemics in schools, and from the fact of the passing around the family of the *imported* "common cold." This is a personal contact disease, and the bacteria are disseminated by the droplet method, as in measles and influenza.

I consider that we, as pediatrists, are interested most in two phases of this discussion; namely, the collateral effects of the disease, the sequelæ (for the mortality is nil) and the prevention of the disease.

The sequelae: Rheumatic fever, pneumonia, sinusitis, otitis media and conjunctivitis are most common, and occasionally nephritis occurs. Also must be considered the effect of vitality lowered by the disease, and its relation to other infections of special character, such as tuberculosis, and also its effect in the progress of organic diseases.

I particularly desire to call your attention to the rôle the "common cold" plays in the life history of tonsils and adenoids. Knowing, as you do, that the original infection produces congestion and inflammation of the mucous membrane of the nose and throat, that the membranes with their glands and underlying tissues are more or less affected, and knowing how easy infection from within and without may be, is it not reasonable to suppose that such tissue, as for example "Waldeyer's ring," may, from continued battering, be unable to bring itself back to normal? And further, knowing that tissue with less than its normal resistance gives invitation, so to speak, to infection, the steps of change from normal to adenoid condition go on with increasing rapidity. It is the old story of each pathologic condition, adding to the vulnerability of the whole.

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* Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

The somewhat intensive study of the tonsil, made by the Pediatric Society of Western Pennsylvania a couple of years ago, showed beyond question that the tonsil was the habitat, normally, of many kinds of bacteria, and that infaction of various kinds, or the stirring to overactivity of the bacteria normally present, was the beginning of many tonsillar attacks, leading often to hypertrophied, pillar-adherent, possibly pus-filled tonsils, with their train of attendant and subsequent ills. How many times each winter do we see cases of "common cold" accompanied or followed by otitis media of greater or lesser severity, and almost invariably we can trace that infection to the original, perhaps seemingly slight, infection of the "common cold." The other complications mentioned are of importance, but to mention them is perhaps all that is necessary.

The prevention of the "common cold" lies, first, in avoiding infection, and second, in guarding against predisposing causes. A campaign directed against the "common cold" would be productive of more general good and more specific good than any such effort directed against many of the so-called serious diseases. People should be educated to a realization of the fact that the "common cold" is unnecessary, because a personal contact disease; that the sum total of loss is greater than in many diseases looked upon as much more grave; that if everyone, upon the appearance of the first symptoms, was isolated, there would be few cases of this most common affliction. Children should be kept from school, should be isolated, and, for even a slight cold, put to bed. You know where a child is when it is in bed, and you can keep others away.

To avoid the predisposing causes, the child's body should be kept in the most vigorous condition; its bowels be kept freely open; its diet plain, nutritious, wholesome and appetizing; its skin kept in the pink of condition. Cold daily baths are a wonderful help in warding off infections such as we are considering, and do much toward promoting bodily vigor. Plenty of fresh, pure air, night and day, is a *sine qua non.*

Let us teach the parents, the school authorities, the children that the slogan, "Oh, its only a cold," is a most dangerous one.

Though I have made such a rapid and poor and uncomprehensive sketch of this too often seriously neglected field in pediatrics, perhaps I shall have stimulated you to some effort to "hit the trouble where it starts."

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DISCUSSION

ON PAPERS OF DRS. WOOD AND EATON

Dr. Harry Lowenburg, Philadelphia: I am of the opinion that everything Dr. Wood has said in his paper ought to be emphasized. I think these matters should be popularized. I referred yesterday to the importance of popularizing certain facts in reference to breast feeding brought out in Dr. Carpenter's paper and I feel the same way about Dr. Wood's paper. The importance of the otological examination should be stated again and again, and yet again, because all of us do not yet realize that a severe otitis media may exist without pain and that therefore no examination of infant or child is complete without a careful otological investigation.

Regarding prophylaxis, Dr. Eaton said that that was a very important feature of pediatrics to consider. I think that in order to put this on a practical basis we must study and learn, for instance, why, when exposed to the same infection, Johnny Jones always catches cold, and why Willie Smith does not. We often have a patient brought to us by the mother, who says, for some reason or other, her child always catches cold. I think we can safely conclude that micro-organisms will not grow without a proper soil, and I have always felt that a change in the body chemistry provided the soil, and that the susceptibility to colds can often be traced to improper diet. Investigation will show that many of these children are receiving an excess of fats and sugars, especially sugar. It has been my experience, if you can remedy these errors which very often produce systemic acidosis, you will very materially limit the possibility of infection.

For that reason, I have treated a great many babies by withdrawing them from milk and all milk derivatives (butter, etc.) and from sugar, and by putting them on a different diet, which will tend toward systemic alkalinity. Such diet consists almost entirely of vegetables, fruits and cereals. I frequently administer a dram of bicarbonate of soda daily, scattered throughout the food. In other words, I think the susceptibility is as important as the infection, as far as prophylaxis is concerned. I feel that susceptibility depends on systemic acidosis, and in order to change the soil one must change the diet by giving one that will tend toward systemic alkalinity.

Dr. Wood: Although I agree in the main that children with colds should be isolated and kept home from school there is a distinct doubt in my mind as to whether this isolation is going materially to decrease this type of infection and this because an individual, to exist in the midst of city life, must develop more or less immunity against the more common infection. This is probably only accomplished by active immunization due to body reaction consequent on either small doses of bacteria insufficient to produce disease or mass doses causing disease. From my own personal experience and observation in other people the removal of individuals to geographic areas where little or no infection is existant lowers the immunity so that when they return to the city or other infected areas there is apt to follow an acute cold. A child probably has to develop its immunity by recovering from a number of infectious attacks. However, until the question of immunity has been more positively settled than it is at the present day I believe that isolation of children with severe colds is advisable although I doubt its efficacy in materially lessening the number of this type of infection.

Dr. Henry J. Benz, Pittsburgh: I wish to endorse Dr. Wood's remarks as to the use of fluids in the nose, and Dr. Eaton's paper in connection with schoolchildren. I have seen colds traveling through the school for several reasons: One was the infective reason, and the other was a routine reason. I remember in one school an epidemic of colds existed, which was stopped only after we found that the janitor was doing dry sweeping. At the present time, the system in the Pittsburgh public schools is to have no dry sweeping done. It is all moist. It is advocated wherever possible to wash instead of dust. We also advocate the pupils' taking exercise at convenient intervals. These are some of the things we have tried out with the children in regard to the infective colds that we have seen traveling through the rooms, and I presume it has been the experience of almost every man here that such things are causes of a lot of the trouble we have.

Dr. Eaton, closing: I agree with what Dr. Wood has said about immunity in connection with constant exposure to cold, but I hardly think immunity acquired that way is worth while. I think the prevention of the cold does more to tide the individual over until the years when, as Dr. Wood says, we do not take cold so often. Furthermore, I think in early life we do not pay attention enough to the sequence of trouble which comes from colds, and the starting up to active growth of the bacteria which may be normal, or abnormal, in the tonsils. When once the tonsils become involved, the neighboring tissues start to become inflamed; they continue getting worse and never get back to normal. Before one is aware of it, the child will have adenoids, especially in a climate like this where there is a lot of dirt in the air and it is foggy and smoky. This is a hard climate in the winter; the tonsils often become infected, and before we realize it we have a condition which is a critical menace.

Furthermore, I think the tonsil with the wide open crypts is a possible avenue of entrance for all sorts of infections, such as pneumococcic, staphylococcic, streptococcic, influenza bacillus, *B. catarrhalis,* and the germs of other diseases.

Those children with wide open crypts are very much more liable, one hundred times more liable, to be infected than those who have normal tonsils, so I think for that reason repeated common colds are very dangerous.

In regard to what Dr. Lowenburg has said about the susceptible conditions of catching cold, I referred to that very briefly. It is a fact that the susceptibility of those children whose diet is not right is greater than those who are normally and properly fed. For that reason, when I see a case of that sort, my instinct is always to get after the food, and also to make the system alkaline as soon as possible, and then you have a rational basis for whatever treatment you may choose to use.

I think colds are, as a rule, in this climate, of short duration, but I have had the picture presented to me so many times of one pupil coming into a room with a sneezy, catarrhal cold, passing this cold on right down the row of pupils. Father brought this cold home, and everybody in the family has it. From seeing those things, it makes me sure that what we call ordinary, common colds are an infection, and are more than a congestion, and I do think that all the things we can think of in the line of prophylaxis are necessary, and I do think also the fact is that if we isolate all colds it is going to diminish very markedly the number of colds we see among children, especially schoolchildren.

MENINGITIS

THE DIFFERENT FORMS AND THEIR DIAGNOSIS *

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The most noticeable peculiarity of the nervous system of the child is feeble inhibition, and often a marked reaction occurs in the child from a cause which produces little or no reaction in the adult. This feeble inhibition of the child is clearly shown in the ease with which convulsions are produced in children from gastro-intestinal disorders, fever, etc. As the child increases in age the inhibitory tone increases. The study of the spinal fluid removed by lumbar puncture is so important and is of so great aid in the diagnosis of meningitis, that a careful neurological study of a case cannot be made without a thorough investigation of the spinal fluid. Its study also may clearly indicate certain lines of treatment.

Puncture must always be done under the best surgical technic. The normal spinal fluid is clear, colorless, alkaline, specific gravity 1.003 to 1.007, and is composed of water 98.74 per cent., solids 1.25 per cent., albumin in the form of globulin and albumoses 0.02 to 0.06 per cent., dextrose 0.4 to 1 per cent., potassium, salts, phosphate and urea 0.15 to 0.35 per cent. In the laboratory the fluid from cases of meningitis should be examined along the following lines: (1) Physical, (2) chemical, (3) cytological, (4) serological, (5) bacteriological, (6) immunological. A few words in regard to each of these different methods of examination is of interest.

1. Physical: The spinal fluid in meningitis may be clear, turbid, opalescent, purulent or bloody. In all acute types of meningitis, such

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* Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

as epidemic cerebrospinal fever, pneumococcic, septic or influenzal, and in brain abscess, the fluid varies from a slight turbidity to a distinct pus, depending upon the acuteness of the inflammation. In other words, just as soon as we see the spinal fluid flow into the test tube we obtain valuable information as to what form of meningitis is probably present and what form is probably not present. In the more chronic forms of meningitis, as the tubercular and syphilitic, the fluid is usually clear, although in tubercular meningitis the fluid may become turbid according to the degree of inflammation.

2. Chemical examination in meningitis shows an increase of albumin in the form of globulin, and in the acute forms of meningitis Fehling's reduction cannot be obtained, although it is present in normal spinal fluid. Fehling's reduction may be present in a more chronic type of meningitis as the tubercular.

3. Cytological examination shows one to five lymphocytes per c.mm. present in normal spinal fluid, and as in all forms of meningitis there is cellular increase, it is evident that the cytological examination is important. In all acute forms of meningitis we have a predominance of polynuclear elements, while in the more chronic type the lymphocytes are present in largest numbers. In tubercular meningitis early there is generally a lymphocytosis, but later the polymorphonuclear cells predominate.

4. Serological examination as to the presence or absence of a Wassermann reaction of the spinal fluid and blood will often assist in clearing up a doubtful case.

5. Bacteriological examination should be made in every case. The diplococcus intracellularis meningitidis, tubercle bacillus, and other organisms found will often absolutely clear up the diagnosis and give valuable aid in the deciding upon the line of treatment.

6. Immunological: Much interesting work has been done along this line and it offers much opportunity for future study and development, but further study is necessary before its value can be definitely determined.

It is important from the standpoint of diagnosis, prognosis and treatment to decide what form of meningitis is present, and I have found that all cases can be well classified under the three following heads:

1. Acute suppurative meningitis, which includes all forms except the tuberculous and cerebrospinal. The forms of meningitis that come under this group can best be designated according to the causative organism, pneumococcic meningitis, streptococcic meningitis, influenzal meningitis, etc.

In acute purulent meningitis, the symptoms are usually a sudden onset, although they may be masked by the primary disease as in pneumonia and septicemia. Briefly, the symptoms are drowsiness, stupor, irregular respirations, vomiting, convulsions, fever, headache, delirium, photophobia, rigidity and retraction of neck, irregular movements of legs and arms, changes in pupil and finally coma. Infants often show a bulging of the fontanelle. Kernig's and Brudzinski's signs are present.

An accurate history may perhaps give us some idea of the type of meningitis present, as the symptoms of the various forms of meningitis in typical cases differ more or less, but the only positive evidence of deciding the form of infection is the finding of the specific organism in the fluid removed by lumbar puncture. In other words, while it is easy in a typical case of acute suppurative meningitis to say that the child has meningitis, without a lumbar puncture and without a careful neurological study of this fluid, one could not say what organism was producing the meningitis.

2. The second group would include that large number of cases of meningitis that are tuberculous. It is practically always secondary to some other focus of tuberculosis in the body, and is the most common form of meningitis in children. The symptoms in this form develop more slowly, especially the prodromal symptoms, as irritability, lassitude, drowsiness, poor sleep, and slight headache. The symptoms, however, gradually become more pronounced; there is fever, hyperesthesia, flushing of face, tache cérébrale, grinding of teeth, gradually developing stupor and often partial paralysis of an arm or leg. Tetanic contractions of various muscles occur and there may be opisthotonos. The eye grounds frequently show choked disk and the presence of tubercles in the choroid. In a typical case of tuberculous meningitis one could perhaps with a reasonable degree of accuracy decide that the meningitis was due to the tubercle bacillus, but one hesitates to do this because it is equivalent to saying that nothing can be done for the child, except wait for it to die. Now, when one considers that there are in tuberculous meningitis atypical cases which may be classified as acute, meningo-encephalitis, spinal and chronic, one is even less willing to decide that a given case is tuberculous. Moreover, the symptoms of the other forms of men-

ingitis may closely simulate the tuberculous form. To sum up then, I would say that one may suspect a case of meningitis to be tuberculous, but it is only justice to the child to do a lumbar puncture and decide positively.

3. Cerebrospinal fever is usually seen in the young child and is caused by the diplococcus intracellularis meningitidis. The symptoms usually develop suddenly with fever, headache, vomiting, rigidity of neck, and stupor. Kernig's and Brudzinski's signs are present, and opisthotonos is often well marked. A positive Babinski may be present. There are various forms of cerebrospinal fever, the ordinary or acute type, superacute, fulminating, mild and abortive. The abortive are usually recognized only during epidemics. Spinal puncture again should be made early, a diagnosis made, and antimeningitic serum employed. During the recent epidemic in Philadelphia, the results following the use of the serum were remarkably good, the death rate in the large number of cases occurring under my care in the Jefferson Hospital and those I saw in private practice being very small indeed.

I would like to emphasize two factors which are all important in the cure of cerebrospinal fever: early diagnosis verified by lumbar puncture and early use of the serum.

A few words as to the differentiation of certain cases of infantile paralysis from meningitis. We, of course, all accept the facts first clearly demonstrated by Wickham that in infantile paralysis the lesions are often not confined to the spinal cord but extend to the pons, medulla, mid brain, cerebrum and meninges. All cases of poliomyelitis may be grouped under three heads: (1) Abortive: In these children no paralysis occurs. (2) Bulbospinal group: This comprises all the typical cases where paralysis of one or more groups of muscles or one or more extremities develops, after certain symptoms as fever, vomiting, drowsiness, lack of coordination, pain, etc. (3) Cerebral group: This is the group that may present symptoms so closely resembling a meningitis of the acute suppurative, tuberculous or cerebrospinal types that a differentiation is difficult.

The symptoms in this cerebral group are the result of an acute polio-encephalitis. They are, briefly, sudden onset with perhaps convulsions, vomiting, fever, headache, delirium, drowsiness, reflexes increased, and paralysis in one, two or three days, involving usually the face, arm and leg on one side. This paralysis is generally spastic in type. The spinal fluid in the cerebral group of poliomyelitis usually shows increased fluid under pressure; the fluid is usually clear, but may be more or less opaque. Albumin and globulin are increased. There is an increase in the number of cells, the mononuclear cells being greatly increased and they may be 80 to 90 per cent. of the cells present. If the fluid is more or less opaque the polynuclear cells may be increased as high as 75 per cent. The cells rapidly diminish in number, and by the time paralysis has appeared the spinal fluid usually shows only a moderate increase in cells and an increased globulin.

CONCLUSIONS

1. An accurate history is of great aid in the diagnosis not only of meningitis, but also usually gives some indications as to the form of meningitis present.

2. Three groups of meningitis are to be distinguished: (a) Acute suppurative; (b) tuberculous; (c) cerebrospinal fever.

3. The symptoms in a typical case may make it probable that a certain form of meningitis is present.

4. The only positive way to decide the form of meningitis present is to do a lumbar puncture and examine the fluid according to modern methods.

5. Lumbar puncture gives valuable aid in prognosis and treatment.

6. The cerebral type of infantile paralysis is really a polio-encephalitis. An early lumbar puncture, the early paralysis, and the presence of an epidemic are aids to diagnosis.

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DISCUSSION

Dr. James K. Everhart, Pittsburgh: While one usually finds the spinal fluid turbid in cerebrospinal fever, occasionally it may be clear, so that one should not, on obtaining a clear fluid, conclude that he is not dealing with a case of epidemic cerebrospinal meningitis. If the clinical history of the case points pretty definitely toward this type of disease, he should not hesitate to give antimeningococcic serum. If it should turn out to belong to one of the other types there has been practically no harm done.

Another thing I should like to emphasize, is this: I believe that very often we give too small doses of serum. We give one dose, repeat it in twenty-four hours, and twenty-four hours later we give another. Certainly those men who have given larger and more frequent doses of serum have had better results than when it has been given in smaller doses and at longer intervals. I should like to emphasize the importance of giving serum, not only at the end of twenty-four hours, but at the end of twelve hours, and repeat at twelve-hour intervals until improvement follows. One certainly is going to lessen his mortality rate by giving increased dosages, rather than to wait for the twenty-four hour interval.

Dr. Graham did not speak of the syphilitic type of meningitis. If you will pardon me, I should like to report a case of this type that came under my care last winter. The patient was a child of 1 year at the time of the first attack. The child had been brought to me at the end of the second month of life for treatment of congenital lues. He was put under mercurial treatment, and had been kept there continuously, and was apparently doing well. He seemed to be up to the average and normal in every way, when he suddenly became ill, had severe convulsions, with temperature of 106, and was removed to the St. Francis Hospital, where we did a lumbar puncture; at that time, although we obtained clear fluid, I gave the child antimeningococcic serum, and the temperature dropped to normal. The fluid was entirely sterile on two occasions, the cells at that time were over 1,600 per cubic millimeter, and the Wassermann was 4 plus.

The child had typical symptoms of meningitis, and had a series of convulsions; later a complete right-sided paralysis appeared. With the use of inunctions of mercurial ointment the condition rapidly improved, and after two or three weeks the child left the hospital apparently well, except for a slight toe-drop on the right side.

Early in August, six months later, he suffered from another attack similar to the first; in this the entire left side became paralyzed. While that condition has cleared up, the general condition has not improved, even with the use of larger doses of mercury. Salvarsan, I might say, has not been used. The child's fluid at the second attack showed over 1,500 cell per c.mm. and the Wassermann was still 4 plus. Here we have a case of acute luetic meningitis, which has so far resisted our efforts to effect a permanent cure.

Dr. J. P. Crozer Griffith, Philadelphia: I may have overlooked part of Dr. Graham's paper, as read by him, but there was one form of meningitis that did not appear to be mentioned. I refer to serous meningitis. This is a very important disease, and a frequent one. A number of years ago Dupres described a condition which he denominated "meningismus," in which there were the symptoms of meningitis produced by the toxic influences of different diseases, but without any actual inflammation of the meninges occurring. This could be seen, for instance, with the infectious diseases, associated with diarrhea, attending otitis and the like. It would seem, however, as though the greater number of cases which could be assigned to this category, if not indeed all of them, are actually instances of a serous meningitis, in which there is an increase of the amount of cerebrospinal fluid, and to some extent of the number of cells present, but with no bacteria discoverable. It is a well-known condition which I have been able to demonstrate repeatedly to my own satisfaction by lumbar puncture. We see such cases, for instance, in pneumonia; and some physicians have been disposed to attribute it to the direct action of the pneumococcus. This is, however, a mistake. It is a noteworthy fact that a pneumococcic meningitis is comparatively seldom seen in pneumonia. The great majority of the cases of meningitis attending this and other infectious diseases are of the serous nature. The affection may be a serious one, and many children die of it, but as a rule the prognosis is good.

A word with regard to cerebrospinal fever. It was my fortune to be on duty at the Children's Hospital at the time of our rather extensive epidemic in Philadelphia the past winter. Two facts impressed me very much. The first is that spoken of by Dr. Everhart, that you may in many cases find only a clear fluid. It is a well-known fact that the meningococci and even the cells may sometimes disappear quite rapidly after the onset of the symptoms, and that unless you have a chance to examine such cases early the fluid may be found to be clear. The other fact is that many children were unable to take serum at all well. Even when given slowly, warmed, and after withdrawal of an equal or a larger quantity of the spinal fluid, cyanosis and dangerous respiratory symptoms developed, and the employment of serum had to be abandoned. Of course, this was not true of the majority, and the employment of antimeningococcic serum is to be regarded as the great standby in the treatment of this disease.

Dr. H. Brooker Mills, Philadelphia: Dr. Graham spoke about the success we all have had this year in the treatment of these cases, and I suppose that, as has already been said, possibly we just happened to have struck the right strain, as naturally we did not all use the same make of serum.

At the Municipal Hospital in Philadelphia we have had a great many cases during the epidemic, and we happened to have on hand several different makes of serum, all of which we used with about equal success. Many of the patients who come to the Municipal Hospital have been sick several days, sometimes even a week or more, so that they are good tests for any serum. We were surprised at the number of patients in whom only pneumococci were found in the spinal fluid, practically all of whom, of course, died.

Dr. Kolmer has suggested the use of 1 c.c. of normal guinea-pig serum to every 10 or 15 c.c. of antimeningococcic serum in those cases in which only pneumococci were found, and we tried it on several patients, but they were so desperately ill, before reaching the hospital, and died so promptly, that we really had no opportunity of determining its value.

As to the dosage, I agree entirely with Dr. Everhart. We frequently puncture every twelve hours in very severe cases, and we have a fairly uniform rule to give 10 c.c. less of serum that we withdraw of spinal fluid, so that if we withdraw 50 c.c. of fluid we put in 40 c.c. of serum, but, regardless of the amount of fluid withdrawn, we never give less than 15 c.c. of serum, sometimes even giving this much after a dry tap.

Referring to the case of syphilitic meningitis that Dr. Everhart mentioned, I would like to call attention to a similar one reported by me in the August, 1917, issue of the *Medical Council*, in which good results followed the administration of 0.6 decigram of salvarsan in 100 c.c. of normal salt solution, given by Murphy drip, 40 drops to the minute.

Dr. H. Lowenburg, Philadelphia: In a series of about forty cases of epidemic spinal meningitis in Mt. Sinai Hospital in Philadelphia, I find that I am able to confirm the experience of Dr. Graham as to the uniformly good results with the use of serum.

Up to this time, I had always been a doubter of the efficacy of the serum, but so many good results were obtained in this epidemic that one must ascribe them to something, either to the natural course of the disease, frequent lumbar punctures, or to the serum.

I wish to record the occurrence of two cases of hemorrhagic meningitis. One started with a frank hematemesis and the patient recovered. The other patient developed profuse intestinal hemorrhage and died. The organism was recovered from the spinal fluid in both these cases and the Widal reaction was negative in the latter, so the diagnosis in each instance was undoubtedly correct.

The point that Dr. Everhart makes with reference to the clear fluid, I have noted also, and this is probably explained by the fact that some authorities believe this disease to be inaugurated as a bacteremia. The germs enter the blood through the nares and later attack the meninges. This would seem to justify the early use of serum intravenously, as he suggests.

I would like to ask Dr. Graham and Dr. Griffith what was the attitude of the authorities in the hospital with reference to admitting those cases in the general wards. In the beginning of the epidemic, during the time when there was one of the greatest infections, the authorities considered shutting down on me with reference to taking in cases at all. I might say it is rather amusing that they permit a pneumococcic type which we know to be incurable, although probably some of us think that epidemic cerebrospinal meningitis is curable, according to our present ideas.

I should like to ask Dr. Graham and also Dr. Griffith what was the attitude of the authorities in the hospitals with which they are connected, in reference to admitting these cases in the general children's ward. At first in the Mt. Sinai Hospital we did this and saw no cases of contagion develop, either among the patients or the attendants. Then for no reason at all the hospital authorities refused to admit the cases at all, although the Bureau of Health raised no objection providing the patients were isolated. A peculiar twist in human intelligence is noted, inasmuch as there is no objection to the admission to the general wards of pneumococcic and other forms of meningitis equally as infectious and probably as contagious (if any of them be contagious) as the meningococcic type, and all surely incurable, while the meningococcic form is regarded as curable and yet must be debarred.

Dr. Griffith: We first took them in the general wards, but we had so many cases, that we afterwards kept them in a separate ward, a ward on which the other wards open.

In the University of Pennsylvania (where we had fewer cases), of the three cases taken into the receiving ward, the children were first admitted into the isolation ward but not separated from the others. The hospital authorities and the city authorities do not require this, and it is not designed that the same conditions shall cover those when they come in as some intermediate carriers.

Dr. Graham, closing: I was very much interested in what Dr. Everhart had to say in regard to the use of antimeningitic serum in cases of acute meningitis where the diagnosis as to the form of meningitis present was in doubt. I agree with him completely that in any case of acute meningitis where there is a possibility that the child is suffering from cerebrospinal fever, that it is wise to inject the serum immediately and not to wait for the result of a culture. It does no harm in these cases to use the serum, and if the case turns out to be one of cerebrospinal fever, much valuable time has been gained.

What was said about syphilitic meningitis is of importance, and the history given of the patient interests me, as I have had under my care, during the last six months, a case of syphilitic meningitis. This child had convulsions with a moderate degree of left-side paralysis, the case simulating very closely a tubercular meningitis. The child showed a 2 plus Wassermann and the mother a 4 plus Wassermann. Under a most vigorous treatment by mercuric inunction and large doses of iodid of potassium internally, with bromid of soda, the object of the bromid being to temporarily keep the convulsions in check, the child has shown a remarkable improvement. There have been several slight convulsive attacks, which occurred early in the treatment, but during the last three months there have been no signs of convulsions or twitchings. The paralysis has entirely disappeared, and the child is much less irritable and fussy than formerly. In the course of a few weeks Wassermann tests will be taken of the mother and child, before they return to their regular medical adviser, who lives at a considerable distance from Philadelphia.

I was interested in hearing what Dr. Miner of Wilkes-Barre had to say concerning the good results that he had obtained from the use of serum during the recent epidemic of cerebrospinal fever; Dr. Lowenburg has also just told us about the good results he secured. Since early spring there have been a great many cases of cerebrospinal fever in and around Philadelphia, and it has been the experience of all the physicians who saw many of these cases that the results were very much better than they had ever experienced in any previous epidemic. This may possibly be due to the fact that the serum we were using happened to be able to control the particular strain of the meningococcus that was present. There is certainly no doubt about the valuable results of the treatment.

All our cases of cerebrospinal fever at the Jefferson Hospital were immediately taken into a very complete isolation department. This isolation department is entirely separated from the hospital, has its own elevator supplying food, with all arrangements to keep the food warm. This department has a number of separate bedrooms, also wash rooms, toilets, etc. We considered that it would be only proper to isolate these patients immediately. We did not have any cases develop in the children's wards of the hospital during the epidemic.

I agree with what Dr. H. Brooker Mills says in regard to the seriousness of pneumococcic meningitis. It is a very dangerous form of the disease, and the mortality is certainly very large.

I was interested in what was said in regard to the taking of an accurate history in these cases. I hope I did not give a wrong impression. I certainly believe that it is most important to take an accurate history. The taking of an accurate history will often decide positively that the child has meningitis, but it is, in my opinion, unwise to decide from this history what form of meningitis the child has. The different groups of meningitis vary so much in their symptoms and may so closely resemble one another that it is only fair to the child to do a lumbar puncture and decide positively what form of meningitis is present.

It is true in regard to what Dr. Griffith said about serous meningitis, that in many acute infectious diseases of children we have head symptoms such as irritability, headache and drowsiness. Very often these are simply the effect that the toxemia produces on the meninges of the brain. My opinion, however, is that in these children a lumbar puncture should decide as to what cases are truly meningitis and what cases are simply due to the effects of the toxemia on the central nervous system by the disease from which the child is suffering, without the child's actually having meningitis.

SO-CALLED HABIT SPASM (TIC) AND ST. VITUS' DANCE

THEIR RELATIVE IMPORTANCE AS SIGNS OF CONGENITAL WEAKNESS *

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Habit spasm and St. Vitus' dance superficially resemble each other, but differ in causation and in their real symptomatology, and require very unlike treatment. I shall discuss only briefly causation, differential diagnosis and therapeutics, but shall especially emphasize the importance of habit spasm, trifling as it may seem in itself, as a sign of congenital weakness and hence a signal of possible future nervous or mental trouble, while St. Vitus' dance does not in the slightest degree indicate constitutional inferiority. To put it more strongly, I shall maintain that tic is an evidence, a symptom of biologic, protoplasmic weakness, the result of heredity, while St. Vitus' dance occurs in children congenitally normal, and in no way casts a shadow on the strength and purity of the ancestral protoplasm.

St. Vitus' dance is caused by some one of several poisons introduced into the body from without and does not require congenitally pathological soil for its fruition. We have pretty well gotten away from the one time prevalent opinion that it is caused by nervous shock from fright, though mothers still love to relate stories of accidents that have frightened their children, accidents which, on investigation, usually prove to have happened weeks before the onset of the disease or not to have frightened the child. Attempts to prove that a specific micro-organism is the cause have failed. No one bacterium has been accepted by even a respectable minority of bacteriologists as the excitant of the disease. Clinically, it has long been recognized that there is a close relation between inflammatory rheumatism and St. Vitus' dance. In a fairly large percentage of cases, the first precedes the second by a very short interval (sometimes there is no interval); in a quite large percentage the rheumatic attack precedes the chorea by several years and in a small percentage the inflammatory rheumatism follows after an interval of several months or even one or two years. If we accept the so-called growing pains of children as being rheumatic the associated occurrence of the two diseases is greatly increased; in fact, too much increased, because if growing pains are rheumatic, all children are rheumatic, and if that is true then its occurrence in a child who becomes choreic proves nothing. Of course, such pains really have nothing to do with rheumatism.

The few gross morbid anatomical changes there are in St. Vitus dance point to the action of one of the poisons which cause endocarditis. Thus in every case recorded in the literature (so far as quite extensive examination reveals) the autopsy has shown vegetative endocarditis. In the only two cases I have examined postmortem (and this small number shows the low mortality rate of the disease) this condition was present. Almost always there is, not only during the illness, but for an indefinite time afterwards, a cardiac murmur, which is regarded by some writers as hemic, but true anemia is very rarely present. For example, in a series of, I think, thirty consecutive cases in which, some years ago, I made examination of the hemoglobin and red cells, I found an average of 80 per cent. hemoglobin and over four million erythrocytes. No count of the leukocytes was made. Dr. Simon Leopold, in my clinic at the Orthopedic Hospital and Infirmary for Nervous Diseases, found eosinophilia in many cases, and this was verified by a later study made by Dr. Frederick H. Leavitt. In normal children the percentage of eosinophil cells is greater than in adults, but in Leopold's and Leavitt's cases the percentage was above the normal for children. It was especially marked in patients who were suffering from their third or fourth attack. Intestinal parasites were not present in the patients and the eosinophilia rather points towards the action of a poison, though it may have been caused in some cases by the herpes of the lip common in St. Vitus' dance. At best, its significance is not great.

To return to rheumatism, as against the view that it is the sole cause is the fact that certain acute infectious fevers, especially scarlatina, occur as immediate precedents of chorea too frequently for it to be merely accidental. Furthermore, the chorea of pregnancy, caused

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* Read at the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

by some disorder of metabolism, is symptomatically identical with St. Vitus' dance. It may be that the frequent association of chorea and rheumatism means merely that the same type of person is susceptible to both diseases, but I strongly tend to believe that rheumatism is a true exciting cause, but only one of several.

It is safe, considering all the evidence, to conclude that St. Vitus' dance is caused by external poisons, but that it does not have one specific cause. As to predisposing causes we know almost nothing except that there is racial immunity in the negro. The lower animals are also immune. The disease occurring in dogs which is called chorea is an entirely different affection. The movements themselves much more resemble the continuous epilepsy seen in man as the result of a small irritative lesion in the motor cortex, and instead of being wild and irregular are rhythmic and periodic. It is always a sequela of distemper and almost invariably ends, after a long course, in palsy and death. Curiously, I am told by veterinarians, it is seen only in overbred, i. e., degenerate dogs. This may be true, it probably is, but we know little of the nervous diseases of street dogs; they do not come within the purview of men of science.

Direct heredity plays no part in causation. It is true that in one of my families seven cases occurred in three generations, but that was an isolated instance in over five hundred families. There were three other instances of the disease occurring in parent and child. Neuroses and psychoses in the parents exert no predisposing influence. It is rare to find a child with chorea either of whose parents have suffered from hysteria, epilepsy, insanity, or a tic, or indeed show any degeneration. The great majority of the parents are fairly healthy except that rheumatism is quite common. Environment plays no part as a predisposing cause; the disease is found equally among the families of the rich and the poor, the wise and the silly, the vicious and the virtuous. It is not more frequent in nervous than in phlegmatic children. Indeed, it seems to be one of the diseases in which predisposition plays only a small part.

The causation of habit spasm is an entirely different story. In it predisposition is the great thing. It occurs only in nervous children. Much more frequently than in chorea, and too frequently to be accidental, there is found some nervous peculiarity, not to say some distinct sign of degeneration, in the family. Sometimes one or the other parent is just enough abnormal to show it to a physician looking for abnormalities (a little eccentric, too emotional and the like), but too often there is a clear history of a serious mental taint. It is very frequent among imbeciles, but I have never been able to satisfy myself whether it is more frequent among those who are imbecile from inheritance or as a result of accident.

All sorts of things have been accused of being the exciting cause. Of most of them we say, they act reflexly (errors of refraction, troubles in the nose, bad teeth, worms) and rest content. Of all these, refractive errors are surely the most important, the most real. It is not infrequent to find that a nervous child who blinks and winks and grimaces continously, has need of glasses, and when properly fitted the tic ceases. But the non-nervous child does not get a habit spasm no matter how great or small his ocular error may be, nor how many worms of whatever species he may entertain as a host, nor how very bent and twisted his turbinate bones may be.

The differential diagnosis between habit spasm and chorea is both easy and difficult, easy in a typical case of either, difficult in the cases of chorea which are slow in onset and begin with a very localized twitching. Habit spasm is most frequently confined to movements of the face and shoulders, much more rarely the hips and legs. It may, however, attack any group of voluntary muscles. It is the same disease, in a minor form, as tic in the adult. The cases of hysteric barking, etc., are really tics. In chorea, while there may be a short period in which there is only a little jerking of the head and shoulders, always in a very short time the movements become widespread and involve the whole voluntary muscular system or at least the whole musculature of one side. (Let me say parenthetically, there is a form of the disease in which the twitching is replaced by a general flaccid palsy, or a palsy of an arm or leg, or of both, and twitching of the other side. Such palsy never occurs in habit spasm.) The movements of tic, as was strongly emphasized by Dr. Hugh Patrick of Chicago, always simulate willed and purposive movements. The child is often accused of making faces or shrugging his shoulders wilfully. The movements of chorea are wildly incoordinate; in no way do they look as if willed. Indeed, the disease has been described as an insanity of the muscles. Again, the reflex spasms, such as facial spasm, due, e, g., to chordoiditis, are not tics. They resemble the movements caused by electrical stimulation of a nerve; they do not mimic emotional movements.

The mental states in the two conditions are interesting. A child suffering from St. Vitus' dance is never emotionally normal. His character, temperament and disposition all change temporarily for the worse. Always he is fretful, peevish, disobedient. Except in the worst cases, he sleeps well; the movements cease temporarily and he dreams but little. Sometimes he becomes really insane. The boy with a habit spasm is, as a rule, emotionally quiet on the surface, though fundamentally he is sensitive and often precocious. His temperament remains exactly as it was before the tic came on and emotional disorders appear years later.

As to treatment, the one important element in the treatment of St. Vitus' dance is bed rest. The child should be put to bed and kept there for weeks. He should have no visitors, no play. He should be kept as quiet as a patient with typhoid fever. For years everybody gave Fowler's solution. Recently we have all, or most of us, been giving antirheumatics, especially a drug, the chemical name of which is so long that I can never either remember or pronounce it and the trade name of which is aspirin. I have used it a great deal (keeping the patient in bed at the same time). Other patients who get only bed rest and a diet of milk and vegetables get well just as quickly. My conclusions are drawn from over two hundred patients. Let me repeat, physical rest and emotional quietness are the two essential things. The next important thing is to omit meat from the diet and to use a great deal of milk, or if raw milk is so distasteful as to be indigestible, as is the case with a few children, then milky cooked food. I use a great many fresh green vegetables and never overfeed, and have found that in the beginning underfeeding is useful. I have had no experience with the recently introduced serum treatment and, from what I have been told, do not think I shall have in the future. I am, however, open to a change of mind.

In the treatment of habit spasm the first thing to do is to find whether there is any peripheral irritation, and if any be present to remove it. All the patients should have systematic but not strenuous gymnastic exercise. In the sudden oncoming cases, which often are instances of the hysteria of childhood, rest in bed and isolation often cure.

Habit spasm very frequently begins in children before puberty and in them the sexual problem may be ignored, but when it occurs at that time or during adolescence the sexual habits and feelings should be inquired into and sensible advice given. Many boys and girls have at that time a period of emotional unbalance; they have new feelings, the origin of which they do not understand, and, for some unknown reason, they get relief from muscle tricks.

These children are peculiarly and unpleasantly sensitive to sensory stimuli and many apparently trifling things may affect them strongly. Thus a very neurotic little boy was brought to me with a quick jerking movement of the head to one side, recurring every few minutes and increased by slight emotion but ceasing in profound emotion such as anger. It came out that this began when he was first put into wide, stiff collars. He himself said they hurt. He was given a larger collar with more freedom of movement of the neck and after a week or so, not at once, the tic ceased. I have no doubt that had he not been relieved he would have soon become a chronic sufferer.

The thing is in a sense a habit, i. e., there is usually at the beginning an unpleasant sensation in the region that later twitches, and this sensation causes the child to contract the local muscles. Soon, however, the thing becomes established and is done unconsciously or, if consciously, outside the will, but, let me emphasize it again, it is only the neurotic child who is so affected.

The importance of these childhood tics is the light they throw on the nature of the child. They mean he is supersensitive and this means that one of two things is very likely to happen at puberty or during adolescence. Either he will become more sensitive and develop hysteria or some other psychosis, even the true adolescent insanity, or, as fortunately more often happens, he will have a stormy adolescence (pass through one of those ill-defined psychoses little studied by physicians, indeed usually not recognized by them, but often noticed by wise schoolmasters of whom the world needs many more), and yet finally, for some unknown reason, attain a stable equilibrium and a commonplace but happy and sometimes, though extremely rarely, a very high, mentality. For safety's sake such children, even though the tic in itself seems trifling, should receive the wisest training. Their lives should be quiet, and uneventful. They should not be pushed in education, but trained in obedience and self-control. They should not be put into surroundings in which the emotions are stimulated. They should be taught to withstand stress, not to run away from it. One fundamental error in reformed education, which is based on the idea that all stress and strain should be removed from the growing child is this very thing. The old Scotch method of training, in which the study of the Westminster shorter catechism and all that went with it was included, is wiser. The catechism may be philosophically false, and theologically erroneous, but pragmatically it is true, i. e., its study and the kind of influence found in homes in which it was used as a textbook produced strong, healthy men of normal balance, as the battlefields of Europe prove today. The softening methods of education, the desire to make a child's life one long sweet day of play, so common with us encourage the development of tics and worse things.

1918 Spruce Street.

DISCUSSION

Dr. Harry W. Mitchell, Warren: My experience with chorea and tic has been largely confined to the more severe forms of both disorders, such as are seen in hospital practice, and entirely corroborates Dr. Burr's differentiation between the disorders. Clinical observation undoubtedly indicates that chorea, in the vast majority of cases, is a complication of some physical disorder, tonsillitis, endocarditis and polyarthritis being the most common etiological factors. Numerous observers in reviewing large series of cases report over 50 per cent. following some of the rheumatic disorders. Unfortunately there was little evidence from pathological studies which was of value in correctly establishing a definite disease of the nervous system. However, there were some observations indicating the somatic character of the disease; for example, the eosinophilia reported by numerous observers, in a large percentage of cases the study of tissues showing small areas of encephalitis usually located in the basal ganglia.

The effects on mentality as seen in the worst cases very closely simulated the delirium due to toxic conditions; for example, the case of a young man who, following an attack of rheumatism, developed most severe choreic symptoms. These were followed in a few weeks by a severe delirium in which visual hallucinosis was a most pronounced symptom, accompanied by excessive motor unrest. The symptoms gradually subsided after many weeks and were followed by an uneventful convalescence and subsequent good health for a period of many years. This case might be considered typical of the mental disorders produced by, or associated with, choreic manifestations. I agree with Dr. Burr in the conclusion that chorea is a disturbance of the nervous system usually, if not always, associated with somatic diseases and that the mental disturbances produced by the trouble in no manner differ from those recognized as the result of bodily illness. On the other hand I regard tic as a reflex and defensive voluntary activity in which, as one progresses from the mildest forms of the tic movement, a connection can be traced between these mild and repeated movements to the symptoms of echolalia and coprolalia, even to fixed ideas and imperative actions.

The character of this more serious disturbance was certainly indicated in the title of the paper recently presented by Dr. L. Pierce Clark, "The Results of the Psychic Treatment of Mental Torticollis." In this paper there is a very clear presentation of the mental states which were carefully analyzed in a series of cases. It is very interesting to note the writer had applied the psychoanalytical methods in a manner which could give no offense to those who might not accept the Freudian theory in its entirety. In the discussion of these cases the psychopathic tendencies and the constitutional inferiority of the individuals have been brought into prominence and entirely corroborate the views of Dr. Burr.

I will present a brief abstract of a case which seemed to be but a more severe manifestation of the same psychotic tendency exhibited in a milder form in the condition described as tic. A young woman of good family and of good education, repeatedly during life up to the age of 30, had periods of a few months at a time which the family describe as nervousness and inability to attend to her usual duties, with many peculiar, whimsical ideas not well described. After a time the symptoms would disappear and the patient would resume her ordinary routine work which required mental application and considerable ability and the work was well performed. She suddenly developed the symptoms previously described to an intensified degree and finally was obliged to seek hospital treatment. When first seen she was practically helpless because of her imperative ideas and obsessions which completely dominated her. Briefly, she was obliged to re-read a certain number of times any article which she attempted to peruse; obliged to blow her nose a certain number of times and do this repeatedly for hours at a time. In going to the toilet she would be obliged to remain for long periods and would be unable to take herself from the room without assistance of a nurse whose attentions she would resent. She would stand at a washbowl for hours at a time endeavoring to make her toilet, washing her hands in a rhythmical and repeated manner. All of her movements had to be counted and this counting was done in series of threes. When spoken to she would insist that the question be repeated to her and would be very unhappy unless the reply was made exactly as she demanded it. In dressing she was obliged to pull on all articles of her clothing in series of two, four, six or eight attempts. When walking about the room her footsteps were counted so that if she did not arrive at her destination in a series of counts by even numbers she would have to retrace her steps. She was impelled in crossing a threshhold to pass over it an even number of times with the result that she could not leave the room unless pushed out by force which caused her great mental distress. In looking at a clock she would be obliged to look at it many times in series of two rapid looks. If she tried to stop this movement her head would be "twitched," as she expressed it, in the direction of the clock. These symptoms together with many others slowly subsided with rest, establishment of good hygiene and many conversations tending to her reassurance and establishment of sympathetic connection between her and those in charge. The result is that she has now for many months been apparently better than at any time in recent years, according to the opinion of her family, though in confidential communications some trace of her ideas are still exhibited though not to an extent which interferes with her daily life.

The connection between such a condition as described in this patient and a mild muscular tic at first does not appear as plain as it does on the study of a considerable group of these patients showing the gradations between the mildest and most severe forms of what must finally be regarded as an evidence of a mental rather than a physical disorder. I agreed unreservedly with the conclusions of the writer.

Dr. Theodore Diller, Pittsburgh: In the main I am in accord with the views set forth by Dr. Burr, but I am not quite so sure as he is that there is not a certain degree of neurotic element in Sydenham chorea, although I recognize with him that this element is much more marked in the tic cases.

It is remarkable how both chorea and tic cases will vary in intensity from the slightest up to the most exaggerated. Nothing that I know of is more dramatic or distressing than one of these exaggerated cases of chorea. Several times I have seen it terminate in death. The most exaggerated form perhaps is that which occurs in pregnancy.

The main features of the treatment of Sydenham chorea I think are pretty generally recognized now; quiet, rest, elimination, proper diet and bathing, suited to the needs of the various cases and considering the severity of the disease. The continuous bath is often of great help.

As to the tic cases besides observation of the general rules of hygiene, physical and mental, gymnastic exercises are of distinct advantage. Some of these cases respond rather readily, others are stubborn, and still others will resist any and all treatment. Meige-Fiendel (Paris) several years ago recommended exercise for tic cases, which I have found very helpful. The main principle of their practice is to convert involuntary movements into voluntary ones. This plan worked out particularly well in one case I have in mind at this moment, that of a young girl of 19 who had a head tic. She was instructed when the desire came to have a movement to suppress it every now and then (for patients moderately affected can do this) and at other times to make the voluntary movement slowly, strongly in the same direction in which the tic would have taken the head, the idea being physically and psychically to convert an irresponsible, unwilled movement into one which is willed. The rapid improvement which followed in this case was very gratifying. In severe, stubborn cases I have seen it fail only too often. But I still try this for most patients suffering from tic.

It does seem that these tics are very much like obsessions, as has been mentioned by Dr. Mitchell. There is not so very much difference between an impulsive idea and an impulsive movement, when we consider how close to our thoughts and feelings are our muscular movements.

Dr. J. P. Crozer Griffith, Philadelphia: One cannot but agree with practically everything that Dr. Burr has said. It seems to be very probable, however, that habit tic, as observed by the neurologist, is generally a much more severe condition than that with which the pediatrist usually comes in contact. Undoubtedly it depends on a neurotic diathesis, inherited or otherwise, as well as on some definite exciting cause. This is the only way in which we can explain its occurrence in certain children, and its failure to develop in others who perhaps have the same local irritation. I have watched a good many in such cases grow into adult life, and it seems to me that the prognosis on the whole is rather good. You can, however, never be sure in the individual case, and the treatment is a very puzzling matter. Not only does the nervous tendency of the child have to be overcome, but often, even more important, the nervous character and the ill-judged management of the parent. We all know how common a thing it is for mothers to bring a nervous little boy or girl to our offices, and talk about the symptoms in the presence of the child. What can you expect to accomplish in the case of such a child who is being handled by a nervous, uncontrolled and foolish mother? Often the mother needs more treatment than the child.

With regard to the direct treatment of the nervous habits of which the tic is a sample, the question often arises, "Shall I try to restrain this child's movements, or shall I let them go and take no notice of them, for fear of concentrating attention upon them?" It is certainly most desirable, and even important, to enlist the child's efforts in the controlling of its grimaces, jerking movements, twitching, winking, and the like. At the same time this must not be pushed too far, and in many instances it is better for the parents to ignore the condition altogether. It must be settled for each child by itself.

Dr. Harry Lowenburg, Philadelphia: I would like to ask Dr. Burr whether he has had any experience with the so-called autoserum treatment, originated by Dr. Goodman of New York in the German Hospital, there. This treatment has received the endorsement of Dr. Jacobi. The technic is as follows: The choreic patient is bled, the blood is coagulated, the serum is diluted with saline solution. A lumbar puncture is done, cerebrospinal fluid is withdrawn and the warm, diluted serum is slowly injected into the spinal canal. Dr. Goodman reports very brilliant results in cases of chorea where marked palsy and incoordinate movements existed. I have tried it in one case and was afraid to do it a second time, because my patient had had a severe collapse. I took occasion to communicate with Dr. Goodman about it, and he was kind enough to describe the technic to me in detail by letter. He said he had never had an experience of that kind. He has reported a number of cases, the majority of which were materially benefited.

There is one question I would like to ask Dr. Burr: I have a child under my care with acute chorea for whom I had prescribed absolute rest in bed and isolation. She had palsy affecting the right arm. A trained nurse was in attendance. The patient rebelled very much, and seemed to be very much more nervous on account of being kept in bed. One day they let her come down to supper, and that night she seemed to sleep very much better. Since then I have changed the treatment, and I have ordered her to be taken out of doors a certain length of time each day. I am wondering whether Dr. Burr would adopt absolute rest in bed and isolation in every case, or whether in such cases as I have outlined he would make an exception.

Dr. Harry W. Albertson, Scranton: I do not think it is the opinion of the majority of men who have treated any number of cases of chorea that any great results can be accomplished without the combination of both rest and forced feeding. That has been my experience. Probably, when there is a lower resistance, and lower vitality, rest is the proper thing, allowing the patient as much latitude in bed as is possible to do, and forced feeding seems to have given better results than all the medication I have ever used.

Dr. S. McC. Hamill, Philadelphia: Dr. Burr will probably remember a case which he saw in the Presbyterian Hospital with Dr. Pemberton a year or so ago, in which practically every kind of treatment had been applied. It was a case of a girl 17 years of age. Dr. Pemberton, who has done such splendid work in the dietetic treatment of arthritis deformans finally placed this girl on a diet restricted in total values and, as I recall, composed largely of carbohydrates. The procedure, of course, was experimental. Under this treatment she began to improve so rapidly that in the course of a few days she was practically free of symptoms.

I agree with Dr. Burr as to the uselessness of aspirin in chorea, and yet, paradoxical as it may seem, I have seen aspirin lead to a cure. A child with chorea in the children's department of the Presbyterian Hospital, to whom my assistant gave large doses of aspirin, vomited violently for several days, and really became seriously sick. All food was withheld until the vomiting ceased and nausea disappeared. I do not commend this as a method of treatment, but the incident illustrates the value of starvation in this particular case.

It seems to me that the problem of the treatment of chorea is the same as that of most other diseases. There is no specific treatment. Each case must be treated individually. No one line of treatment is applicable to all cases. I am quite certain that the withdrawal of food will not cure all cases, and I am equally sure that forced feeding is not applicable to all cases. Generally speaking, however, I believe that a diet of low value and small amount is helpful in the early stages, especially in the more severe cases, and that a gradual increase, sometimes up to the point of reasonable so-called forced feeding, is often helpful in the later stages. One should, however, always avoid overtaxing of the digestive organs.

PREVENTION OF BLINDNESS

Among the striking exhibits in connection with the National Conference of Charities and Correction held in Pittsburgh, June 6 to 13, was that of the National Committee for the Prevention of Blindness, displayed alongside the exhibit of the Pennsylvania Association for the Blind.

The idea of preservation of sight was driven forcibly home to the hundreds of delegates who visited the exhibits occupying the sixth and seventh floors of the new Chamber of Commerce Building, and as a result many visitors from Maine to California came to the headquarters of the Pennsylvania Association for the Blind to get further information as to the general "preparedness program" of saving eyes. Several of these delegates reported that they would take home with them good ideas gleaned from the panels on prevention.

Probably the most direct result to date has been the decision of the city of Pittsburgh to prepare a special lot of literature with its own imprint for dissemination throughout the city for the saving of sight.

CRITICISM OF ULCER TREATMENT BASED ON EXPERIMENTAL DATA *

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Scientific therapy can be based only on rational etiology. Ulcer of the stomach offers us no specific etiology for all its protean manifestations, and clinicians have likewise come to the conclusion that, regardless of the lack of knowledge regarding the etiology of ulcer, the cause is not the same in every instance. In other words, today we realize that there are different forms of ulceration in all likelihood differing in their etiology. It is probable that some have a bacterial origin along the lines suggested by Rosenow and Richet, but there are others in which no such mechanism seems to be at work. Some might be associated with aberrant colon implantation; some may be due to vagus and sympathetic disturbances, and in not a few there seems to be a definite toxic basis which finds no counterpart in other forms of ulcers. This immediately suggests a varying treatment depending on varying etiology. We know, furthermore, that the associated phenomena, secretory and motor, vary markedly in different cases and call for totally different treatment. In only 40 per cent. do we find high acid figures, in 26 per cent. there are subacid findings, indicating clearly that in only a certain proportion are the acid secretory findings to be held as the cause of ulcer chronicity.

It becomes apparent, therefore that we have a separate problem in each case depending on the position of the ulceration, the association of motor and secretory defects, the extent of the ulceration and finally, and by no means unimportant, the associated systemic changes. These include toxins from deficient renal and hepatic function, toxins from intestinal stasis, and finally the blood dyscrasias which seem to play such an important rôle in acute ulceration.

To construct a treatment which permits us to obtain the ideal intragastric condition for healing, we must remember that there are certain periods which are particularly conducive to healing and other periods which serve to accentuate the chronicity of ulcer. We now know that in the fasting state the stomach walls are contracted through peristole function, and that the fasting secretion or residuum contains less than one half the total acidity and decidedly less than one half of the free acidity of the active phase of digestion. We likewise know that in place of peristalsis, we have tonal and hunger contractions which seem to be intimately associated with peristole function, while in the active period of digestion the peristole function is inhibited by the act of swallowing, peristalsis begins and a much more powerful secretion appears. Peristole function and tonal contraction serve to approximate the ulcer edges; peristaltic waves and gastric distention due to ingested food serve to widen the gap and prevent healing. Therefore, apart from any specific treatment of ulceration we should attempt to secure as much rest to the stomach as is consistent with health. Even in the absence of food, early stenosis with recurring hypersecretion defeats this purpose.

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*Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

Summing up the points which favor healing of any ulcer we may enumerate them as follows: intact and undisturbed peristole function, decrease in gastric peristalsis, diminution or neutralization of secretion short of producing irritation (in other words, secretion of the type seen in the empty stomach), a reflux of pancreatic secretion in the stomach which is readily demonstrable on the empty stomach and found in nearly every residuum normally, and finally intact gastric motility and evacuation.

On the other hand, the factors which tend to produce chronicity and inhibit healing are excessive peristalsis and reduced peristole function, exaggerated gastric secretion and reduction in the normal duodenal reflux which tends to neutralize excessive acidity and, finally, delayed motility whether spastic or cicatricial. To the latter must be added the possibility of infection.

In considering the treatments which have been suggested for ulcer cure, our experiments indicate the following: The yolk and white of the egg act very differently, and a whole egg in the normal stomach takes frequently three hours, in ulcer cases longer. Whole milk produces very large curds and a pronounced secretion; boiled milk, minute curds and more rapid evacuation. Meats generally produce more acid than carbohydrates. Water alone produces very pronounced unsaturated secretion; oils and fats likewise produce a perceptible gastric secretion, but with the difference that there is also pancreatic and biliary regurgitation. Only the Sippy treatment causes a total reduction in secretion, and in some cases it fails. The oils, milk feedings, milk and cream, peptonized milk, none of them cause low secretions and none of them improve gastric evacuation to the same degree that carbohydrates do.

In the treatment for gastric ulcer, one point stands out preeminently, and that is the necessity for rest. When the points preventing healing are considered, it becomes evident that we must combat:

1. Peristalsis: It has been computed that 2,000 peristaltic waves occur during the complete digestion of a single meal and from 300 to 500 an hour, figures which I believe are a trifle high. These facts, however, merely indicate the difficulty in obtaining gastric rest.

2. Secretion: In the average meal 700 c.c. or more, but in ulcer very much greater. The average normal residuum of 50 c.c. becomes 100 c.c. or more, and the slight postdigestive hypersecretion seen in a certain proportion of normal cases may amount to many hundred cubic centimeters with a corresponding rise in unsaturated acid. The normal psychic secretion which averages from 150 to 250 c.c. becomes very much greater and the delayed evacuation of food with the presence of secretagogues in the stomach makes the problem one of breaking the vicious circle, which in these instances is due to:

3. Delayed motility due to spasm or obstruction in turn inducing hypersecretion and stasis, two elements most favorable to continued chronicity and most antagonistic to healing.

4. Infection which in the light of recent experience from work such as that of Richet and Rosenow becomes increasingly important. Here the mode of infection is obviously hematogenous, but even those authors will acknowledge that the stomach is not the primary point of attack, but the seat of secondary implantation. It becomes necessary to isolate the primary focus, and presumably the causative streptococcus and to immunize the individual by judicious administration of properly selected vaccines. It is obviously impossible to obtain vaccines from the ulceration except at operation, but we can be guided by the fact that presumably the ulceration in the stomach is a secondary focus from some other infected point. Rosenow pointed out that cultures from the mouth and other infected foci were capable of producing ulceration in the stomach of laboratory animals. From his experiments presumably the streptococcus is always culpable and from the studies of Andresen and others, it is the *Streptococcus viridans*. We can, therefore, culture other foci such as the tonsils, nose, pyorrheal pockets, and

in this way obtain an autogenous vaccine of streptococci. It is now considered good form to administer these vaccines at the same time that the general ulcer treatment is carried out.

To my mind, the most important point in treatment, however, is that the food administered be as nearly similar to the material found in the duodenum as it is possible to prepare it. This means that previous preparation, particularly from a mechanical standpoint, is absolutely essential, and only in this way do we succeed in obtaining gastric rest. By means of a special form of double tube which I have called the gastroduodenal tube, it is possible to intubate directly and at the same time both the stomach and the duodenum. The two tubes are so adjusted that from a fixed point such as the incisor teeth, one will be in the duodenum and the other in the stomach. The technic is a little complicated, but we have succeeded in running parallel series showing the digestion taking place simultaneously in the stomach and the duodenum. It is difficult without seeing these two series to realize how important is this gastric digestion, and it is easy to understand how essential it is to reduce food to the duodenal phase of digestion before any real success can be attained in achieving gastric rest.

The criticism of all ulcer treatment must be inevitably that sooner or later it is essential that we introduce stimulating substances in the stomach; milk is stimulating, eggs are stimulating; all foods are more or less so. It was not surprising that Einhorn suggested duodenal intubation, but even that procedure, theoretically so beautiful, is accompanied by gastric hypersecretion which destroys its primary purpose.

If all foods are stimulating (and our experiments indicate that they are), how is it possible to achieve gastric rest? Nutrient enemata only partly supply the needed nutriment and temporary inanition is questionably preferable to permanent ulceration; nor is it certain that in certain forms of fasting hypersecretion, more fatal to ulcer healing than saturated secretion, may play an important rôle. We can select foods which inhibit secretion, but what we are told by no means agrees with what we find in the stomach. The white of egg causes very little secretion, the yolk markedly stimulates it; meats cause more secretion than vegetables, but have equally greater combining power; fruits and sugars cause comparatively little secretion. Many ulcer cures are founded on frequent milk feeding, but the average glass of milk takes three hours and often many more to digest, and yet we feed the patients the dose every two hours. Eggs are instituted, the whole beaten egg, it being believed that it is easily digested, but even more than milk the egg remains in the ulcer stomach four and often five hours, and can be readily demonstrated by fractional testing. How then are eggs, which delay evacuation and cause a perceptible secretion, indicated in a disease which induces exactly the same thing, delayed evacuation. Cereals and fruits are readily evacuated and easily borne; there is more justification for their use. We see here and there criticism cropping up regarding the time-honored ulcer cures. In the first place, we see Yarotsky substituting whites of eggs and butter alone for a long interval, for these substances alone inhibited secretion. The theory works beautifully with the whites of eggs, less beautifully with butter. While in a general way it is true that evacuation of fats is roughly proportioned to their melting point, nevertheless it does delay motility and it is accompanied by perceptible uncombined secretion.

Loeper noted that in intractable irritable ulcer in which nothing will remain on the stomach, sugar can be given as diet inducing little change and causing rapid evacuation. This almost achieves the ideal, for in experiments which Dr. Hawk and I reported, we showed that it was possible to induce experimental achylia or delay in the appearance of the secretion for 60 to 80 minutes by the introduction of concentrated dextrose solutions into the stomach. This diet which, however, cannot be persisted in long, nevertheless, accentuates one physiopathological dictum, i. e., the introduction of a substance which undergoes no alteration in the stomach. It seems to be an accepted fact that the more extensive the digestive changes the more abundant the secretion. Fats supposedly undergoing no digestion in the stomach nevertheless induce the regurgitation of duodenal contents and bile into the stomach which in a way compensates for the secretory stimulation and delayed evacuation which occurs and often promotes healing. Carbohydrates never in health cause such regurgitation of bile, because, with the exception of automatic regulation of acid, bile is not essential. Furthermore, carbohydrate digestion, with the exception of mechanical comminution by the antrum and I believe cellulose softening, is essentially intestinal, salivary action being negligible and stimulatory to gastric digestion.

The proteins are pre-eminently the foodstuffs digested in the stomach; they cause delay without marked bile and duodenal regurgitation, therefore their delay is harmful instead of, like the fats, healing. Again, they cause the most acid and in turn are healing. Furthermore, they of all foods are primarily altered in the stomach.

The foods therefore indicated in the diet of ulcer are carbohydrates and carbohydrates predigested and thoroughly comminuted so as to aid in rapid evacuation. This view was championed most recently by Smithies in the scientific diet. I would add carbohydrates altered to the stage of duodenal digestion by fine mechanical subdivision and dextrinization and vegetables, if they can be reduced to this stage of perfect maceration and division cellulose.

We find another recommendation in Smithies' treatment which calls for confirmation, and that is parboiled milk. Whole milk causes large difficultly digestible curds; boiled milk causes fine curds readily and completely digested with relatively early evacuation. Mathiew, recognizing this difficulty in ulcer treatment, prescribes citrated milk which presumably does not curd. This question is best settled by boiled milk. Other expedients, such as alkalies, do not act in the same way.

Sippy's method of alternate milk and cream feeding and neutralization, in spite of the popularity which it has caused, still suffers from two faults, inaccuracy and too much fat. The average patient cannot stand pumping with fat and least of all a persistent all-day cream mixture. It is liable to nauseate the individual and it has the other fault that, although the curds are small and soft, there is nevertheless slow evacuation of this mixture. Fractional analysis through entire days of the Sippy treatment reveals lapses where the secretion is not neutralized, although in many instances the free acid is entirely cut out. The only gauge for correctly determining the amount of alkali is the institution of the fractional method during feeding intervals and enough of the combined alkalies are given to completely saturate the free acid.

Feeding of any kind opposes gastric rest; feeding means peristalsis, secretion and inhibition of peristole tone which tends to approximate the walls of the ulcer. But if feeding must be done it must (1) cause as little peristalsis and secretion as possible, and (2) must resemble the duodenal chyme as far as possible, factors only readily attainable with carbohydrates. Fats as pointed out, while they delay and cause secretion, nevertheless cause the regurgitation of the healing duodenal secretion and bile, and therein lies their merit. In obstruction and ulcer with pronounced pylorospasm, however, the regurgitation is reduced to a minimum, while gastric delay, hypersecretion and fatty acids are increased to a maximum. Fats are therefore indicated with carbohydrates in the treatment of nonobstructive ulcer or in the form of duodenal ulcer, more and more rare on careful study accompanied by hypermotility and premature evacuation. In stenosing ulcer, carbohydrates, nonstimulating protein like egg-whites, and boiled milk are indicated unless the spastic phenomena and delay in evacuation disappear. When evacuation time is improved, then finely prepared meats can be given and egg yolks.

Today we realize the value of absolute starvation, not merely because it presumably gives the organ rest; it is never rested, but peristalsis and secretion are lessened while peristole function and rhythmic tonal contractions are at a maximum. The acidity and physiological activity of the residuum or empty stomach is very much less than that of the digesting organ. We realize that the old nutrient enema is now displaced by the Murphy drip with nutrient material, dextrose, alcohol, or even the peptone, dextrose, peptonized milk combinations.

In the second place it becomes apparent that when mouth feeding is begun the foods which are given should be given bearing in mind the above facts. One of the most difficult things to control is the administration of water. Water on the empty stomach causes a marked unsaturated secretion; therefore, water in ulcer cures should always be given with food when the secretion can be utilized or saturated or with alkalies. We believe that ulcer feeding should commence with the administration of sugars, or dextrose, egg whites and butter if unobstructed, then the peptonized boiled milk and the predigested macerated carbohydrates, only after two stages occupying two weeks are carried out. Other points usually neglected in the treatment of this condition: Stasis of the duodenum and ileum delays gastric evacuation, and visceroptosis and atonicity of the bowel promote all three; therefore, in every case of this type where a suspicion of these factors enters, treatment should include not merely recumbent posture, but also tightly applied adhesive belts increasing intra-abdominal tension. Bowel disinfection and stasis may have to be counteracted by high recurrent irrigation, but as the above diet is essentially low in putrescible substances, this precaution is only occasionally necessary.

Infection as pointed out by Rosenow, and as indicated by Turck and others commends itself for practical consideration. Rosenow showed that selective streptococcic strains from the tonsils, teeth, pyorrhea, as well as other sources, could under particular conditions induce ulcer. Andresen of Brooklyn isolates these organisms (streptococci) and Turck isolates the colon bacillus and both by careful graduated vaccine administration use this treatment to combat ulcer. In all cases, therefore, we must bear in mind the possibility of infection, and secondly combat it by adequate measures. Intragastric disinfection does not disinfect organisms lying in the peritubular spaces or in the submucosa.

Another point worthy of consideration is the criterion of ulcer cure. Disappearance of clinical symptoms simply means a disappearance of pylorospasm, vagotonia and hypersecretion. All these are consistent with latent ulcer as is the disappearance of occult blood. The disappearance of the defect or groove in the roentgen-ray plate is a fallacious sign, because a true groove usually spells a calloused ulcer and such an ulcer rarely heals. If after months motility and secretion are still normal we have presumptive evidence of ulcer cure, but, in my opinion, an individual who has taken such a cure must be on a modified dietary for at least a year.

Remember that newer investigation such as that of Wilensky and Crohn indicates that gastro-enterology is not a physiological operation, that the normal tonus rhythm and often hunger contractions are destroyed, that secretion is often excessive, and that more of the delayed evacuation is most pronounced, in the fact of these indictments representing a few of the functional apart from the twenty or more anatomic defects which might accompany the operation, it behooves us to pay more attention to the medical cure of ulcer.

In conclusion, I would say:

1. We believe today that the etiology of ulceration may be very different in different cases; infection may explain one group, mechanical and secretory defects another; nervous disturbances another; but that all are due to one mechanism seems improbable.

2. Treatment must therefore vary with the underlying associated factors, the one group being the etiological or causative factors, the other the sequelæ, stenoses, secretory and motor anomalies accompanying it.

3. Ideal treatment is that which enables the stomach to approach its rest phases, or the condition seen in the fasting stomach, namely approximation of the gastric walls by intact peristole function, reduction in both quantity and acid quality of the secretion, inhibition of gastric peristalsis and promotion of the tonal contractions seen on the empty stomach.

4. Practically every form of food is stimulatory, some very much more than others, but the ideal condition would be the approximation of the food ingested to that seen in the duodenum. Duodenal chyme is finely divided, homogenous, and entirely different from the material seen in the stomach (gastric contents). This can be readily demonstrated by the double gastroduodenal tube which I have described.

5. Whites of eggs alone among the proteins occasion little stimulation, boiled milk is entirely different from whole milk, fats cause a secretion and delay motility, but they induce the regurgitation of healing duodenal and pancreatic secretions.

6. Sugar unquestionably reduces or inhibits secretion, and should be used in the early stages of ulcer cure. Carbohydrates rather than milk would rationally follow, owing to their reduced evacuation time.

7. The frequent feeding of substances which require three hours or more for their evacuation results in gastric distention which is antagonistic to cure.

8. The Lenhartz treatment is objectionable because of its excessive egg content, the presence of which delays evacuation.

9. The Leube method presents too abrupt a transition from rest periods to pronounced stimulation.

10. The Sippy treatment has much to recommend it, but it is deficient in that the fat is poorly borne and encourages motor delay, while the chemical neutralization is inaccurate.

11. Oil treatment causes unquestioned gastric secretion, but there is a duodenal reflux which antagonizes this phase. It should not be used where there is marked motor impairment.

12. Ideal therapy calls for maximum rest periods with a diet finely comminuted, little stimulating, rapidly evacuated, and approaching as nearly as possible duodenal chyme. This means predigestion of all food.

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DISCUSSION

Dr. C. R. Jones, Pittsburgh: I have been very much pleased with the presentation of this paper on the treatment of gastric and duodenal ulcer. I have been interested in the work of Dr. Rehfuss and Professor Hawk at the Jefferson Hospital in their study of the digestibility of certain foods, and I have been pleased to see that their experiments have confirmed some of the things we have learned in our treatment of ulcer. The method of examining duodenal secretion in the stomach in case of the ingestion of fat was an interesting matter in recalling to my mind the old method of obtaining duodenal secretion for examination in which 50 c.c. of olive oil were introduced into the stomach and the stomach contents withdrawn in thirty minutes through the stomach tube in order to secure duodenal secretion for examination.

I looked forward to hearing Dr. Rehfuss mention the form of treatment in gastric and duodenal ulcer which with some has become a routine practice, that of the use of the duodenal tube with which he has so ably obtained these secretions both from the stomach and the duodenum. This method obtains for us an ideal rest which is required in the treatment of both gastric and duodenal ulcer.

Reference was made to the treatment of cases in which there was a six-hour residue. This recalls to me a case recently under my care in which there was a seven-hour residue and in which the roentgenologist reported a duodenal ulcer with also the evidence from the roentgen-ray findings of ulcer in the lesser curvature, and stated that he regarded the case as distinctly one of surgical type. When I said we expected to treat the case medically he said he would be very much interested in seeing what could be done. We used in the treatment a combination of the alkaline and atropin methods for the purpose of removing the inflammation and spasm at the pylorus to allow the duodenal tube to pass through. In this case after a period of three months there was no residue at the end of five hours. All evidence of ulcer except a slight deviation from the normal at the site of the duodenal ulcer had disappeared. This is only by way of illustration of the manner in which we can combine some of the methods of treatment.

I heartily agree with Dr. Rehfuss in his reference to the Lenhartz method of treatment. When this treatment was first announced I treated a series of cases and was unable to obtain the results promised. With the old von Leyden treatment, which is a modification of the first treatment for ulcer of which we have any knowledge, supplementing that with rest obtained from the use of the duodenal tube, the gradual increase of foods which are easily passed from the stomach and which create the least amount of hydrochloric acid and other gastric secretions, we may obtain satisfactory results. Management of the case should be continued, however, for from one to two years before the patient may follow the routine of the average person.

Dr. Thomas Ridley Currie, Philadelphia: I have had no special or large experience in the treatment of gastric ulcer but can give my method of treating the occasional case that comes to the general practitioner. I feel that in some small degree this method is confirmed by the splendid outline given by Dr. Rehfuss. When I suspect the presence of ulcer I usually put the patient to bed for a week or more and give a prescription containing a small dose of morphin, a large dose of bismuth and bicarbonate of soda. I give peptonized milk, just as little as the patient can get on with, and under that treatment the few cases of gastric ulcer that I have been called on to handle have done fairly well. Dr. Rehfuss in the beginning of his paper mentioned the streptococcus and the colon bacilli as etiologic factors in the production of gastric ulcer but did not in his remarks on treatment say what might be done in the way of prevention. He mentioned infection from the tonsils and teeth. Of course, it goes without saying that in any case of gastric ulcer such sources of infection ought to be looked for and if present ought to be removed as part of the routine treatment.

Dr. Judson Daland, Philadelphia: One of the most important points in Dr. Rehfuss' discussion is the application of new methods of securing gastric contents for examination. In other words, he has presented a new technic and a new method of studying the function of the stomach. I wish simply to emphasize the fact that with this new method we secure new information which indicates new ways of combating the pathological process causing and continuing gastric ulcer which, as he has pointed out, is not a simple matter. He has shown that ulcers possess as great variations as the individual digestive power of the patients. Another point which I desire to emphasize is that it is very difficult to be sure that a chronic gastric ulcer has been cured even though the patient becomes symptom free. I well remember one case in particular in which the patient with chronic indurative ulcer was entirely relieved from symptoms under treatment and operation revealed a chronic ulcer. Here again is room for further study along lines by which a permanent cure may be secured. Many cases are temporarily cured so far as symptoms are concerned yet ultimately terminate in carcinoma. The reference to Rosenow's work showing the relation of streptococcic infection to gastric ulcer is interesting. It seems to me that all must remember that not only may the ulcer of the stomach be variable and the etiology multiple, but that a combination of causes may be present in the particular case under study. Speaking broadly from my own clinical experience, I have seldom been able to connect gastric ulcers with streptococcic infection; still we must bear in mind that this method of causing a gastric ulcer or converting a simple ulcer into a chronic one must be given due consideration. I have long felt that many of these ulcers, streptococcic in origin, recover with or without any treatment. On the other hand, a simple ulcer produced by other causes may by reinfection be converted into a chronic indurated ulcer.

Dr. Rehfuss, closing: The question of the treatment of gastric ulcer by the duodenal tube is an important one. By Einhorn it is regarded as an ideal method, but we found that in one instance we had serious hemorrhage; in another, there was persistent hypersecretion in spite of the fact that the tube was in the duodenum. The method does not appeal to me. The patient's feelings also I believe should be taken into consideration. We know that there are secretory reflexes from the duodenum and I know from direct evidence and demonstration that there is an increase in the secretion when the duodenal tube is in place in the duodenum.

Dr. Jones mentioned a seven-hour retention and the recovery of the patient. I have had a case in which there was a six-hour retention with deforming ulcer believed to be surgical. The patient went through the ulcer cure and is well up to date but has at times indigestion. I cannot promise that the ulcer is cured but the delayed evacuation of the stomach has disappeared.

With the Sippy method I think in the milk and milk mixture the boiled milk combination is more readily secured and serves the same end.

In the symptom-free patient mentioned by Dr. Daland there is no method of demonstrating a definite cure of the ulcer. I see cases of chronic ulcer in which for months no symptoms may be present and then for several weeks the patient has acute pain and distress. I recall one very interesting case of ulcer of the duodenum. When I first saw the patient there were very severe pyloric spasm, hypersecretion of a quart or more, a deforming ulcer in the second part of the duodenum and marked food retention. All the physicians at the Jefferson Hospital saw the case. On simple rest in bed and medical treatment every symptom disappeared and to this day the patient is free from symptoms. The last residuum was only 55 c.c. The case shows the curious variability of ulcer and the way in which it will without demonstrable cause cease to give symptoms.

THE SOCIAL AND GENERAL CARE OF GASTRO-INTESTINAL CASES IN THE DISPENSARY *

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In the treatment and care of gastro-intestinal disorders as in the treatment and care of so many other disordered conditions, drug therapy alone can no longer claim a preeminent position. Too often in the past good results have been accredited to special systems of drugging when in reality the benefit gained was due to associated means employed.

Nowhere more than in the handling of gastro-intestinal diseases has the modern effort to place the practice of internal medicine on a sound scientific basis been of more assistance. Our former hazy notions as to gastric physiology and function are becoming clarified and our former equally hazy groping for the right therapeutic combination in a given case is giving place to the possibility of obtaining a definite group of facts about the gastro-intestinal tract and using therapeutic measures which have been checked up and proved. As has been intimated, this has in a measure robbed drugs of their importance and has placed other measures on an equal footing. With those measures of a more general character this discussion is especially concerned.

As the truth of this has been realized at the University Hospital, where the dispensary gastro-intestinal service is a large one, we have come to lean more and more on the social service in our gastro-intestinal work. In this dispensary the work is so apportioned that one worker devotes her entire time and attention to the gastro-intestinal cases. We are convinced that our good results in association with the social service depend very much on the interest, intelligence and training of the individual worker. These are necessary, as the worker has much to do on her own responsibility. She must be able, when the case is explained to her, to understand it from a diagnostic standpoint, and must be able to grasp the way in which the measures recommended are expected to benefit the patient. The advantage of a firm grasp of the case in the doctor's mind is largely lost if this is not reflected in the one who is directly to oversee the treatment. It also happens that the trained social worker has invaluable suggestions to make to the physician as a result of her home observation of cases.

Probably the most time-consuming of the social service worker's duties is that of directing the diets. To be truly successful she must be able to get away from rule-of-thumb dieting. Taking constipation as an example, she must be able to grasp the difference in nature and indications of a spastic and an atonic constipation, and to get away from the idea that all cases of constipation are to be treated with a coarse, bulky and stimulating diet. Likewise in the constipation so often associated with hyperchlorhydria, she must realize that a new element here is governing the case, and that the coarse diet must give place to the bland one supplemented by the use of mild laxatives.

She must realize that pain can as readily appear in a stomach that empties too quickly as in one in which the irritating products of retention are accumulating. Also, that there are hyperesthetic and nervous stomachs in which the pain reaction is prompt and excessive and this regardless of the nature of the food taken.

Further, to work intelligently she must understand how causes external to the stomach itself can, through the central nervous system, set up motor and secretory changes with their train of symptoms. The physician in charge must stimulate her ability to picture what is happening in her cases, as in this way most quickly will she be able to dispel that sense of confusion and helplessness which every beginner in this field of work experiences.

The dissecting of diet lists and an analysis of the effect of different foods on gastric motility and secretion is helpful, the main thought constantly being to remove the sense of haziness and uncertainty which usually accompanies dieting. Emphasis is laid on such simple facts as (1) that of the proteins, starches and fats, the starches leaving the stomach the most quickly.

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* Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

the proteins less rapidly and the fats the most slowly; (2) that when these are mixed the length of time required for their leaving the stomach will roughly depend on the proportions in which they are present; (3) that roughly a like ratio exists between the time of gastric emptying and the degree of subdivision of the food. The social service worker must know that a stomach which empties normally under pleasing or usual surroundings may delay indefinitely this emptying under the influence of unusual surroundings or of anger, worry, fatigue, etc. This sort of schooling explains for her occurrences constantly met which otherwise would baffle her comprehension and tend to reduce her to rule-of-thumb dieting.

When the requirements of a case have been outlined the actual construction of the diet is left to the social service worker. She has at her disposal routine diets such as liquid, soft, low protein, high protein, bland, stimulating, etc., but it has been found that a diet built on the individual requirements as modified by the limitations of purse, intelligence, nationality, etc., is much more effective. The patient brings this diet at the next visit and the physician has an opportunity to observe how his suggestions as to diet have been carried out.

Among the fairly intelligent and well-to-do the results are good, but among the slum dwellers and in our foreign quarters the work is most discouraging. It is surprising, however, what a patient and persevering social worker can accomplish. We have instances where whole families have had their mode of life and their notions of diet and hygiene completely changed. Fortunately, this sort of knowledge is contagious, as there is no better apostle of right living than a convert. The credit for cases such as these must go wholly to the social worker, as the physician's prescription and advice would have been so much wasted energy without the prolonged follow-up and the ever-present helping hand. In special cases the social service gives pecuniary assistance in procuring articles of diet which otherwise the patient could not have. Where it is impossible to get the desired results at home beds in the medical and surgical wards of the hospital are available. When these patients are sufficiently recovered they become dispensary patients again.

It is surprising how many cases come to a gastro-intestinal clinic which in reality are not primarily gastro-intestinal cases at all. These people suffer from gastric and intestinal symptoms to be sure, and often severely, but the primary cause of the trouble is elsewhere. Often the run of secondary or reflex disturbances will be such that one feels that the case with gastro-intestinal symptoms that is in reality a gastro-intestinal case is the exception.

Some of these external causes which have especially interested us of late seem well worth mentioning. Foremost amongst these have been the disturbances of toxic origin. The association of bad teeth and an unhygienic mouth with gastro-intestinal disorders is an old story. In these cases the appearance of the mouth speaks for itself, but in the group to which reference is now being made, the teeth and mouth to outward appearance are normal. The difference is simply that in the latter cases, the trouble lies hidden. The often beautiful dentistry in these cases merely renders the condition the more menacing. A mouth full of gold-crowned or filled teeth always awakens our suspicion, and we have learned that the harmless appearance of a tooth is no guarantee of its harmlessness. The roentgen ray must be the court of last appeal.

There does not seem to be any set way for this toxic condition to express itself on the alimentary tract. In weak, anemic and undernourished individuals the toxin seems to have a poisonous effect, and the relaxed, atonic, achylous and chronic catarrhal syndrome is met. In the more sthenic individuals the toxin seems to act as an irritant and the symptoms associated with pylorospasm, gastric retention, hyperchlorhydria and hypersecretion prevail.

In so far as treatment of the mouth is concerned, the sthenic type is the more readily benefited. Our experience with the cases in which the vitality has been seriously undermined has been disappointing; many patients react very slowly and some few are apparently very little if at all benefited. It is a case of locking the door after the horse is stolen.

What has been said of the mouth can with like weight be said of the throat and nose with its accessory air chambers. One very useful lesson that experience has taught us is the relation of the adenoid area to upset stomach. Our attention was first called specially to this relation by the case of a child of nervous temperament who developed an uncontrollable vomiting. After the usual causes for such vomiting had been carefully eliminated, the condition was finally controlled by having the child isolated in a quiet room in the hospital. Among other very empiric means employed, the nose and throat were systematically treated by the resident physician. Considerable amounts of tenacious mucus were dislodged from the nasopharynx in this way, and the relief of the gagging was so prompt that the relation could not be ignored. This was undoubtedly a pneumogastric reflex and not a pneumogastric neurosis, as was at first thought, although undoubtedly the highly nervous temperament of the child greatly facilitated the establishment of this reflex.

When a patient complains of the semi-nauseated and half sickened feeling so often met in stomach cases, the nasopharynx should be investigated, for aside from the common association of nasopharyngeal catarrh and gastric catarrh, it may be found that a sticky discharge, having its origin in the adenoid area and gravitating toward the soft palate and root of the tongue, may be setting up a persistent sense of nausea and easily elicited desire to vomit.

So often, after investigating and adjusting everything else, have refractive and other errors in the eyes proved to be the cause of the trouble that now we never fail to think of the eyes as a possible source of mischief. It is in such side investigations as these that the hospital dispensary offers a splendid opportunity, with the loss of very little time and at no expense, to get definite information on special areas. This problem is now solved for the rich and the poor, but is as yet unsolved for the patient of moderate means in the hands of his private physician. This offers a very interesting topic of discussion.

Nothing will be said on the relations of the appendix and gall-bladder to gastric and intestinal disorders except to emphasize their frequence and importance.

The relation of the circulation to the digestive functions has held our interest. There is one phase of this subject which we would especially like to mention. At one time in connection with settling a dispute in regard to the most effective way of applying the Rose adhesive support to the abdomen, a number of these supports were applied to patients in whom the usual indications for this application did not exist. So often was the benefit marked that a common ground for this improvement, in cases otherwise entirely different, was sought. We finally decided that the common benefit of the support resulted through its action on the circulation in relieving the mesenteric and portal congestion and sluggishness.

An indication then, further than the presence of relaxed and ptosed states, for the use of the support we feel to be the suspected or proved presence of circulatory sluggishness below the diaphragm.

While on the circulation one point which is apt to be overlooked is the relation of emphysema to gastro-intestinal disorders. Aside from its frequent association with general arteriosclerosis, emphysema affects the circulation below the diaphragm by the resistance which the attenuated lung tissue offers to the passage of the blood from the right or venous side of the heart to the left or arterial side. This suggests the comment that, by the failure to recognize those digestive disorders which have circulatory insufficiency as their cause, digitalis is too often overlooked as a therapeutic agent.

One last and very prolific cause of gastro-intestinal symptoms is the female reproductive system. Nowhere in the body are the toxic and reflex possibilities so great as here. Nowhere are chronic and insidious changes more prevalent. No survey of a gastro-intestinal case in a female, which manifests any unusual delay in its relief, is complete without a careful pelvic examination. Again we are confronted by the fact that a physician must combine in himself skill in a number of specialties or must turn for most justifiable assistance from his colleagues.

In hospital practice it is under the eye of the social service worker that the patient is led through the maze of these special examinations. Left alone, patients will not take the trouble to avail themselves of these opportunities.

Given a more or less nauseating dose to take at specified intervals and a laxative on which to lean, it is surprising how long patients will keep on before they stop to consider whether they are experiencing more than passing benefit. It is a question of education all around. The physician must educate his patients out of the nux, soda, gentian and cascara class, or, as one of our medical teachers has said: "It won't be many years before they will be educating him."

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DISCUSSION

John H. Musser, Jr., M.D., Philadelphia: Dr. Howell has rightly accentuated the importance of the sociological treatment of gastro-intestinal diseases in contradistinction to the drug treatment. There is no phase of internal medicine in which a faulty mode of living plays such an important etiological part as in these types of disorders, represented largely by the so-called neuroses. Their proper correction depends on skilled advice and instruction as well as continual following up of the patient to see that the physician's recommendations are properly carried out. Exercise, hydrotherapeusis, a proper dietary, thorough mastication of food, rest and relaxation after eating, are a few of the physical measures which nowadays we are coming to appreciate and to value as much as we do drugs in the management of these conditions.

In dispensary practice the physician has neither the time nor the opportunity to see that his advice on these matters is followed out. To elucidate the problem of how this may be accomplished, it is necessary to call on the social service worker for aid, and with her help this problem is being solved. The social worker engaged in this work (and she is preferably a skilled dietitian) sees to it that the patient has the proper diet, that the correct abdominal support is secured, that the specialist in other lines is consulted when necessary, and that all the physical and social procedures advised are carried to their conclusion. By a system of following up the patient the worker makes certain that the clinic is not abandoned when a certain degree of cure has been effected but that treatment is persisted in until permanent benefits have been achieved.

The aid that a skilled, tactful, interested social worker renders the physician is invaluable and represents a very real advance in the care and management of the outpatient.

DR. HARRY R. DECKER, Pittsburgh: This paper emphasizes lessons well worthy our taking to heart. The day has come perhaps when physical measures and measures of hygiene are as important, if not more so, than those strictly medical. In the realm of gastro-enteric cases this is particularly true and Dr. Howell in his experience in the University dispensary has seen it work out in that fashion. A number of years ago I read a book written by an English physician which was entitled "Air, Food and Exercise." The author laid particular stress on this proposition and in many ways seemed to be ahead of his time. He claimed that all disease in its etiology might be traced to the food as a cause; that it was either improper of itself, improperly cooked, taken in improper amounts, or eaten improperly. While we will not go this far we recognize the force of his argument. There is no question in listening to this paper but that there is efficiency in the method as carried out at the University dispensary; that the patients are well taken care of and through the splendid social service department are perhaps receiving better care than is the average case taken care of by a hospital.

If one should make any criticism it is perhaps that too much responsibility is put on the social worker or the nurse. It seems to me, however, that the work is a step in the right direction and that with such a nurse or social worker properly checked up by the doctor no harm can come. I think there is a lesson here also for us who are doing surgical work. It often happens that after taking out a gallbladder or an appendix we feel satisfied that the patient is cured without having inquired why he had had cholecystitis or appendicitis. Such patients go away and lapse into the same unhygienic conditions which may have been responsible for their condition. Therefore, it seems to me that a surgeon and a specialist ought to be particularly anxious to follow their cases up and send them to the medical dispensary if necessary for observation.

I am glad to have heard Dr. Howell lay stress on the matter of team work in the care of hospital cases. It seems to me that the modern hospital does not do its full duty unless it gives the patient the benefit of the service of all the specialists in the institution. As suggested the patient most handicapped is the one not in the dispensary and yet without means to consult one specialist after another. Those doing general practice ought to adopt such team work as Dr. Howell has suggested, or perfect themselves in the specialties.

DR. JOHN A. LICHTY, Pittsburgh: I think Dr. Howell's paper is a most timely one. We are all acquainted with the group treatment in pulmonary tuberculosis and with what it has done in such cases. We have now coming to us the group treatment of diabetes mellitus. In Dr. Joslin's work in Boston one sees how easily he takes care of a large group of diabetics. Taking a number of cases with the same affection and cultivating an esprit de corps it is as easy to treat twelve cases as one. I believe this will be true of the gastro-intestinal diseases. Four or five months ago in traveling with Smithies of Chicago, when talking over our difficulties with this class of cases, he said, "I believe I will go home and establish the group treatment just as we do in tuberculosis and diabetes."

The group treatment should consist of the social worker or the physician himself speaking to the patients not only about the preparation of food but its character and cost. Then there should be the following up of the patients as stated by Dr. Decker, especially of the surgical cases. It is so easy to say to a patient who has been under treatment for a long time that he must be operated on and then he will be well. Such patients are operated on but in two or three years may have the same or similar symptoms. If such cases could be followed up a return of their symptoms might be prevented. I think, therefore, that the subject is timely and I believe that we should in dispensaries and in private work try to establish the principles which have here been so well presented.

DR. HOWELL, closing: Dr. Decker is quite right in his criticism of the responsibility that is thrown on the social worker when the scheme such as is used at the University Hospital is being carried out. I spoke of three things which were requisite in the social worker; first, she must be interested in the work, no matter how intelligent and well educated she may be; secondly, she must be intelligent, no matter how well trained she may be, she must have intelligence and common sense; thirdly, she must be well trained. The young ladies we have had at the university have all been trained dietitians. When one has such a qualified person working with him the stimulation reacts on oneself. During the summer, vacation our workers may go to the Massachusetts General or other large hospitals, and in the fall come back with a lot of new ideas that make you keep right up to the notch. Group study of these gastro-intestinal cases makes intensive work possible as we can do a number of gastric analyses about as easily as two or three. The students have been very much interested in the work in which Dr. Rehfuss has done so much to interest us all; i. e., fractional gastric analysis. It gives them lots of practice and when they find how easy it is to do in the dispensary they are prepared to do it in their own private work. Dr. Musser in his discussion mentioned the so-called gastric neuroses. In the University Hospital we try to keep away from this diagnosis, and it is my personal opinion that there are very few clear-cut cases of this condition. We should not fall back on such a diagnosis any more quickly than on the diagnosis of neurasthenia in a case of general nervousness.

THE PHARMACOLOGY AND THERAPEUTICS OF THE DUCTLESS GLANDS PREPARATIONS *

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The first point to emphasize in outlining the pharmacology of the various organic products is the lamentable state of the whole question. You will recall Professor Halsted's statement less than two years ago that "it must be evident to everyone that there reigns the greatest confusion on the subject of the functions of the glands of internal secretion." Again, hardly two months ago, two New York practitioners, Abrahamson and Climenko, referring to the dominant views, write that "the skepticism of the validity of these dogmas daily increases. Indeed, we are now in danger, perhaps, of a reaction in which we shall tend not to overestimate but rather to underrate and despise the power of glandular therapy. This tendency is dangerous to progress, and we must counteract it by judiciously weighing all theories and by accepting none which is not adequately substantiated." Gentlemen, I do not hesitate to state that the whole field of endocrinology does seem to be sinking into the depths of a quagmire. If we inquire into the causes of this, the answer is available in the advice given by the authors just quoted. Had all theories been judiciously weighed, confusion would not reign supreme. Indeed, I would be guilty of moral cowardice, since we are dealing with a question of the first order as regards human welfare, did I fail to express the opinion that if the path I opened nearly fifteen years ago had been followed, there would now be no confusion to deplore. A careful garnering of all sound experimental and clinical data; the subjection of these data to close analytical reasoning; the avoidance of any preconceived conclusion, and the acceptance of no deduction otherwise than as a working formula, is a road towards the truth which time has sanctioned but which investigators continue to overlook. Confirmatory evidence is, however, steadily accumulating in support of the working hypotheses I have urged, and the day is not far off when their strength will be such as to eliminate all doubt that the method followed to reach them was the fruitful one.

Beginning with the adrenals, you will perhaps recall the glacial period which followed the publication, some fifteen years ago, of my opinion that these organs played a rôle in the body equal to that of any major organ. Nobody would question their importance today, and yet what are the guiding pharmacological data upon which the practitioner now labors? He is told that adrenal preparations cause a temporary rise of blood pressure and increase the power of the cardiac contractions; that they act on the involuntary muscles, stimulating them at one time and inhibiting them at another, the intestines in particular; that they enhance carbohydrate metabolism and inhibit the functions of the pancreas; finally, that they excite the sympathetic system and promote contraction of the arterioles. On their face, these contradictory teachings are well calculated to cause so conscientious an observer as Halsted to speak of "confusion." These so-called functions are mere isolated experimental results and not functions at all. They are but incidents of the true function; mere bricks in the construction of the edifice. Are they even exact as deductions? In several respects such is not the case. We are told, for instance, that adrenal secretion, as represented by adrenalin, raises the blood pressure; but this is not true of very small doses of the adrenal principle, the kind that the practitioner tentatively starts with as a rule; in fact, such doses lower the blood pressure. Nor does it cause inhibition either of the pancreas or of the intestine. Both these conclusions are experimental errors, being based on the use by the experimenter of doses exceeding the physiological limit. The inhibition thus produced is due to constriction of the arterioles which supply arterial blood to the pancreas and to the intestinal mucosa, as it does all arterioles. Other fallacies are available, showing that various contradictory results recorded are mainly due to misleading conceptions of the action of adrenal products employed.

As regards my own interpretation of the functions of the adrenals and the manner in which adrenal preparations produce their effects, they have stood the test of time in the sense that the vast amount of excellent experimental work done in this country and abroad, in recent years, has harmonized with them irrespective of the often false conclusions reached by its authors. Briefly, they are: (1) That besides increasing the power of the right heart while passing through it to the lungs, the adrenal secretion on reaching the pulmonary

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* Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

air cells, takes up the oxygen of the air, thus fulfilling the rôle of a secretion deemed necessary by various physiologists to account for pulmonary respiration; (2) that it becomes in doing so a constituent of hemoglobin which physiologists had failed to identify; (3) that this constituent of hemoglobin, which I termed "adrenoxidase," possessed catalytic properties, and that it was distributed by the red corpuscles to all tissues including the nervous system, sustaining oxidation therein. This chain of events, strongly sustained, as previously stated, by experimental and clinical data, had, in keeping with other scientific questions, several missing links. The most important of these have been furnished recently by experimentation. These are that the adrenal principle increases the respiratory excursions of the lungs and of the chest muscles; that it augments the depth of respiration itself, and, finally, that it increases the intake and consumption of oxygen and also the excretion of carbonic acid. Gentlemen, this respiratory function of the adrenal secretion is beyond denial, today, the fundamental principle of its therapeutical application.

Taking up the practical end of this comprehensive function we shall begin with the condition in which the proper use of adrenalin is one of the greatest life-saving measures at our disposal. I refer to what I have termed "terminal hypo-adrenia," in which either as a result of exhaustion, focal hemorrhages or hemorrhagic infarcts, torpid circulation, etc., of the adrenals, their secretory activity is more or less inhibited towards the end of infectious diseases, for instance, pneumonia, typhoid fever, scarlet fever, diphtheria and puerperal fever.

As stated by Harlow Brooks recently, experiments now under way tend to show that actual amount of adrenalin in the circulation is deficient. This was also shown by Goldseiher.[1] What is the result? Weakened heart action and irregularity, tending towards failure; more or less dyspnea, unless compensated by rapid breathing; suffusion with a bluish or violet tinge of the skin, all with the typical picture of impending collapse. If in such a case you inject in each arm subcutaneously, 7 drops of the 1-1,000 solution of adrenalin in a syringeful of saline solution, and give orally 10 minims of a good tincture of digitalis, a powerful adrenal stimulant, repeating the treatment every three hours, you will see, as I have, desperately ill patients steadily return to life. We are not dealing here with mere palliative; we are restoring the adrenal principle which the body lacks to carry on pulmonary and tissue oxidation. It does more, and through a function which, notwithstanding ample experimental and clinical proof, the prevailing teachings persist in ignoring, even though such names as Langlois, Charrin, Oppenheim occur among the many who have urged its recognition, it takes an active part in the defensive functions. We thus obtain through the use of the adrenal principle not only a resurrection of vital activities, but an aggressive reaction against the toxins which tend to arrest them.

In the light of the physiological rôle I attribute to the adrenals, the striking, sometimes instantaneous, effects of adrenalin in bronchial asthma also become intelligible. It is generally recognized today that this form of asthma is due to spasm of the bronchial muscles. Is it by raising the blood pressure, by promoting carbohydrate metabolism, or even by increasing the action of the heart that adrenalin produces such effects? If in a typical case you auscultate the heart, you will soon ascertain whether it is not reacting with vigor to increase reflexly the pulmonary circulation. But if you grant that the adrenal principle increases directly the power of the blood to take up oxygen and carry it to the tissues, including that of the heart and vascular muscles; that it enhances the depth of respiratory excursions; that it promotes the output of carbon dioxid; and, finally, that it evokes a defensive reaction through which the poisons which cause the bronchial spasms are broken down, your reasoning faculties and scientific acumen will, I am sure, be better satisfied than they are with prevailing doctrines.

It will become apparent also that the same underlying function will better explain the results obtained in many conditions in which the vital process is depressed, the various disorders such as collapse, shock, neurasthenia, Addison's disease, Asiatic cholera, etc. Finally, in view of the fact that the adrenalin principle also circulates in the nerves, a function I pointed out as far back as 1903, and which is also being sustained by the work of others, you will realize why Crile was able to keep a decapitated dog alive nine hours by means of a circulatory current composed of saline solution containing adrenalin. It was life itself that he maintained, through the principle which endows all cells of the body with oxygen.

Turning to the pituitary body, you doubtless know that in so far as the functions of this organ are concerned, there are two schools which may be said to be as far apart as are the two terrestrial poles. The dominant theory is that ably sustained in this country by Cushing, which endows the organ with a secretion possessed of the power to promote growth, carbohydrate metabolism and the development of the organs of generation. This applies mainly to the anterior lobe, extirpation of the posterior lobe having failed to produce morbid effects. The second is my theory, which endows the organ with the far more important function of protecting the body against certain intoxications, by enhancing the activity of the other ductless glands, notably the adrenals and thyroid, which, as we shall see, also produces a defensive hormone.

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[1] Wien. klin. Wchnschr., June 2, 1910.

As regards the secretion theory, this has received considerable experimental and clinical support, but its weak sides have not been looked into. When this is done, it will be found to have little real foundation. You all know, for instance, that extractives of the posterior lobe are the most active in practice; this is supposed to be due to a secretion. But as Biedl, who has probably done more experimental work on the ductless glands than any one in Europe, contends in reference to this lobe, "it is not apparent that the suppression of the posterior portion is attended by any consequences whatsoever." Again, the anterior lobe, as you well know, is that mainly concerned with the pathogenesis of acromegaly. Yet, how can we reconcile the production of unilateral acromegaly, or, indeed, of acromegaly of a single extremity, as occasionally observed, with a secretion of that lobe, or even of the whole organ? Could a secretion produce such localized effects? A nervous element is obviously suggested in this connection. Now, I have always urged, and do not hesitate, after fifteen years, to restate, that the posterior pituitary is a nervous organ, a true neural lobe as it has been called. Compare this view with existing facts. You know that in pituitary tumors extirpation of the organ is now practiced without discernible aftereffects. If the organ were the source of an important secretion, in keeping with the adrenals, the thyroid, etc., we would normally expect some serious result such as that following the removal of these organs. When, however, the organ is regarded as only a coordinating nerve center whose function can be taken up by secondary basal, bulbar, or spinal centers, the actual results assume a normal aspect. The function of the chief center is gradually lost as the disease progresses until extirpation becomes of but little moment.

In so far as the rôle of this center is concerned, I can only repeat what I have long urged in this connection: that we are dealing with the chief coordinating center, or ganglion, of the sympathetic system, and that it includes among its functions that of regulating the volume of blood admitted to the ductless glands, which means regulating their secretory activity. As regards the anterior lobe, I will merely recall (referring you to previous writings for evidence) that from my viewpoint it is a contractile organ, much as is the spleen; that it projects periodically over a layer of sensory cells, resembling those of the nasal olfactory area, a serum-like fluid in which both white and red corpuscles have emptied their contents. If this fluid contains certain poisons, the sensory cells react as do the olfactory cells when impinged upon by odorous emanations, and excite through sympathetic nerve paths the ductless glands to inordinate activity. This continues until the offending substances or toxins in the blood stream no longer irritate the pituitary sensory cells. This only occurs, however, when the poisons are broken down into eliminable wastes, that the kidneys, simultaneously stimulated, tend as rapidly as possible to excrete. This is not a mere figment of imagination, gentlemen, but a strongly entrenched hypothesis based on many coordinated facts. Hippocrates, through the light of his genius, had foreseen the need of such a protective system to account for many phenomena he had witnessed. Time, by placing at our disposal ample means of research, has opened for us the book of Nature. Organisms as low as amphioxus show distinctly the landmarks of this defensive function; it may be discerned throughout the whole phylogenetic scale to man. I hope the day is not too far off when you will realize the importance of the idea as a whole to suffering mankind. If you will try to explain in a way satisfactory to your own judgment the action of an inoculation of vaccine by prevailing teachings, then, take up the same action as produced through a cellular layer quite as sensitive as is the olfactory area to minute dosage, you will, I believe, decide that Hippocrates was right in pointing to the need of some protective system in the body to account for many phenomena witnessed.

That it is through the thyroid and adrenals that this function is mainly exercised is also shown in many directions. Besides the purely experimental facts which it would take too long to recite, I will merely recall the cases of acromegaly in which Graves' disease is a prominent accompaniment of the erethic stage, with the signs of myxedema and Addison's disease in the asthenic stage. The results of extirpation of the pituitary directly suggest, moreover, the presence of a protective influence; thus, while most experimental animals die of convulsions due to toxic wastes and intercurrent infections, human beings have been known to be abnormally sensitive to poisons even to the point of dying under conditions which would not have compromised a subject with a normal pituitary gland.

Turning now to the therapeutic use of pituitary preparations, why are they so efficient in so many disorders in which adynamia is the main feature? From my viewpoint this is because, owing to its importance as a functional center, the pituitary body as a whole is extremely rich in potent dynamic substances. I had long held that in view of the fact that the posterior lobe gave the chromaffin test, the most active agent in its preparations was adrenal substance, closely bound up with nuclear bodies. This view, long contested, has now been sustained by others. Moreover, like adrenalin, it has been found to increase the power of cardiac contraction while slowing its rate; to influence respiration and the blood pressure; to act as a mydriatic; to promote carbohydrate metabolism; to increase the coagulability of the blood; and even to inhibit intestinal peristalsis experimentally, etc. As is well known, its effects are more lasting than those of the adrenal principle; this is owing to the organic bodies with which it is combined and which amplify the range of its usefulness.

My experience with pituitary, particularly the posterior lobe, coincides with that of R. A. Bate, who, after using it in over 1,000 cases of disorders in which cardiovascular and metabolic atony were prominent and where deficient defensive activity prevailed, considers it as easily the most efficient agent in organotherapy. It is of great value in bronchial asthma, in the terminal heart failure of infectious diseases, particularly pneumonia and typhoid fever; its effects being less ephemeral than those of adrenalin; also in the heart failure of shock and hemorrhage and in the cachectic stage of Graves' disease. With the use of pituitrin in obstetrics and agalactia I have had, of course, no experience. In the neuroses, neurasthenia and the myasthenias appear to be its special field, as a valuable adjuvant to other measures. It is useful in hemorrhagic disorders, hematemesis and hemoptysis, an injection of 10 to 15 minims of the excellent liquid preparations of pituitary now available acting sometimes with striking promptness, owing to its influence on blood coagulation.

Turning to the thyroid gland and the parathyroid glandules, what difference of opinion there may exist between other endocrinologists and myself appears to be merely one of degree as regards their importance in the defensive functions of the body. No one today would deny their influence on nutrition; on hydrocarbons as represented by fats; on the cerebrospinal and peripheral nervous systems; on the gonads, or generative organs, including the mammary glands—all due to the iodin in organic combination supplied to the organism. If, however, we consider the subject as a whole from the viewpoint of the therapeutist, I do not hesitate to state that if we fail to attach due importance to the antitoxic power of the thyroparathyroid secretion, 99 per cent. of our understanding of morbid processes due to thyroparathyroid disorders, primary or secondary, will be obscured.

In this connection, I must record a protest against the frequency with which thyroidectomy in Graves' disease is performed by surgeons. It is not indicated in cases due to shock, fright, etc., nor in cases due to infection. It is in the latter form, however, that due appreciation of the relationship between the thyroid apparatus and general immunity is necessary. Since I first advanced this view in 1903 ample independent support has been accorded it by European investigators, to such a degree, in fact, that justice to the patient imposes its recognition. Whether the case be traced to infection originating in the tonsils, the teeth, the gums, the sinuses, the alimentary canal or any other structure, the fact remains that this focus by initiating a defensive reaction in the thyroid apparatus simultaneously initiates the toxicosis to which the symptom complex of the disease is due. To eliminate these foci of infection and procure contraction of the thyroidal arteries while insuring absolute physical rest to reduce to a minimum the formation of tissue wastes, is to afford the patient all that which the surgeon can promise without depriving the sufferer of the greater part of one of his most important organs. The same process prevails in the initial development of goiter, also the result of some underlying intoxication which evokes a degree of defensive response on the part of thyroidal tissues exceeding their normal capacity, and entailing therefore hypertrophy. If the cause, whatever it may be, endogenous and exogenous, is removed sufficiently early and before local degenerative changes have had time to develop, the goiter may disappear completely. I may mention in this connection a case in which a goiter as large as a half-orange vanished after diseased tonsils had been removed. The intoxicant may be water, often from fecal contamination as shown by McCarrison; it may arise from the intestines, carious teeth, etc., any condition in fact which entails the penetration of some poison in the blood. All this logically emphasizes the importance of the thyroid apparatus as a defensive structure.

The therapeutic use of thyroid preparations has, in most instances, quite another purpose. that of enhancing oxidation. Indeed, they have often been shown to raise the temperature, sometimes several degrees; to increase the oxygen intake and the carbon dioxid output sometimes over 20 per cent.; to augment nitrogen and phosphoric acid excretion, the latter sometimes very markedly. Graves' disease, we know, includes all these symptoms. Conversely, thyroidectomy lowers oxidation, the output of carbon dioxid, nitrogen, phosphoric acid, and other familiar symptoms of myxedema being decreased. The effects of thyroid gland in the latter disease and cretinism sufficiently emphasize the influence of the thyroid on general metabolism. This applies also to the bones, as shown by the beneficial effects of thyroid gland in osteomyelitis, a result which further sustains the now well-established influence of the thyroid apparatus upon calcium metabolism.

A cardinal point in the use of thyroid preparations is that of dose. It should be remembered that a small dose of thyroid gland is invariably useful in appropriate cases because it enhances metabolism, and that conversely, large doses are invariably harmful in all cases, because by stimulating catabolism excessively they disturb the metabolic equilibrium. Again, the marked influence of thyroid on metabolism just described must have recalled that of the adrenal products. In truth, they work hand in hand, and you will find in practice that the use of thyroid gland and pituitary gland (the latter because of its adrenal substance as urged) gives better results where thyroid is indicated than the latter alone, whether we deal with obesity, rheumatism due to hypothyroidea, various dermatoses of the erythematobulbous type, the eczema of young children, osseous disorders in which defective nutrition prevails, osteomyelitis and suppurative processes, general hemophilia or any other hemorrhagic disorder. I would urge as a mistake the abandonment of other tried measures; indeed, the best results are obtained by those who administer glandular products with the view of sustaining and even upbuilding the foundation of the organism while enhancing its defensive resources, thus aiding the well-tried therapeutic agent employed.

The time available does not permit me, unfortunately, to review more than the three principal organs; but I hope to have convinced you that while there does exist confusion in the prevailing interpretation of the ductless glands, there is no ground for the belief that the subject as a whole will at all drop by the wayside. Just as the deepest night precedes the dawn, so must our knowledge of these structures soon reach its fruition. Particularly in our country will this be the case, because of the presence among us of such men as Cushing, Cannon, Hoskins and many others who are devoting their attention to what will ultimately prove to be a new medical era. Indeed, imagine present-day medicine with at least five of the major organs eliminated from all consideration, and you will have an insight into the possibilities of the future, particularly if it continues to sustain my belief that the ductless glands not only constitute the very foundation of physical life, but also that they serve to defend it.

2043 Walnut Street.

DISCUSSION

Dr. S. Solis-Cohen, Philadelphia: If any one is entitled to speak positively concerning the use of the ductless glands as therapeutic agents it is Dr. Sajous, yet even he, with scientific reserve, admits that we are not yet in position to dogmatize. His words will bear repetition: "A careful garnering of all sound experimental and clinical data; the subjection of these data to close analytical reasoning; the avoidance of any preconceived conclusion; and the acceptance of no deduction, otherwise than as a working formula."

The debt which the medical world owes to Dr. Sajous for the enormous labor he has performed in "garnering" the data, is beginning to be acknowledged. The analysis is not yet complete. New facts brought forth constantly must modify previous opinions. So long as we avoid preconceived conclusions and realize that our theories are only working formulas, Dr. Sajous will not ask us to accept all his views without using our independent judgment. Hence it is that I cannot subscribe unreservedly to his theory of pituitary function. The facts of acromegaly seem to be against it. The differences between adrenal and pituitary substances and principles in therapeutic effect do not seem to be entirely cleared up by it. That there is a center which regulates the endocrine and autonomic nerve functions is certain on clinical, of not yet on experimental, evidence, and it may well be that this is, as the lecturer suggests, the pituitary gland. I do not deny the fact. I am prepared to admit its probability; but I do not consider it fully established.

I am equally unwilling to subscribe to current theories—that is if those current a year or a month or a week ago are still current. Certain experimenters and surgeons revise their dogmatic conclusions so frequently that we are somewhat at a loss to know just "where they are at" and I prefer to admit my ignorance of more than the facts of therapeutic observation. These convince me of the high importance of posterior pituitary preparations in clinical medicine. So far as I know, I was the first to use them in hay-fever, asthma, urticaria, Graves' disease, and similar autonomic disturbances, as also in acute lobar pneumonia, to sustain blood pressure and avert tympanites. Increasing experience gives greater and greater confidence in their usefulness. They must not be employed, however, in conditions essentially characterized by rise of blood pressure. When such rise is merely incidental and pituitary is otherwise indicated we may associate with it a thyroid preparation in suitably small quantity especially in persons pathologically obese or with tendency to arterial hardening.

It is a matter of individualization in the specific case; and the lecturer has already emphasized the converse expedient—that is to say, the guarding of thyroid preparations with pituitary, when there is reason to dread an abnormal depression of cardiovascular tone. The combination is thus one highly useful in many conditions of aberrant autonomic action, associated causally or sequentially with excess, failure or perversion of endocrine secretions.

I have recently made some observations on the use of special pancreatic preparations (of the whole gland) in glycosuria and hyperglycemia of diabetes mellitus. In a number of cases the results were encouraging; that is to say the symptom was measurably controlled. In diabetes insipidus pituitary and thymus preparations were useful. Also the value of thyroid and parathyroid preparations in tuberculosis, especially when associated with calcium, is a practical point that will bear reemphasis without regard to its theoretic justification.

Other experiences with these and other glands could be cited, but such a catalogue would fulfill no good purpose at present. What is especially to be noted is that the skepticism of ignorance of 25 years ago must not be allowed to change into an equally ignorant credulity today; that we must not accept dogmatic statements, therapeutic or physiologic, based on insufficient evidence even though the evidence be experimental in character; that patient assemblage of data, critical analyses, are still necessary; and that only by some such working formula as the lecturer offers us, can we as yet coordinate our clinical and laboratory observations. But the final test is clinical experience.

Dr. Judson Daland, Philadelphia: We all know that Dr. Sajous has devoted himself to the study of the ductless glands for more than 15 years and therefore it is with great reluctance that I rise to make a few remarks on the subject of which he is the master. More particularly am I unwilling to enter into a discussion regarding the exact value of certain theories. He has pointed out to you that we now know that these ductless glands are vital organs and that he looks on these glands as having in addition to other functions that of a defense mechanism by which the body is able to defend itself from various poisonous substances entering the circulation. I frankly admit to you that I am not able to come to any conclusion from the little information in my possession. We may agree with the author that because of the inherent difficulties that reside in this subject we are only on the threshold of a complete understanding of the physiology of the ductless glands, and that it is important to keep in mind the difference in the effect of a therapeutic and a toxic dose of any one of the preparations of these ductless glands. Much evidence exists supporting his statement that adrenalin increases oxidation and benefits certain cases of bronchial asthma. Clinically we recognize that hypoadrenia occurs not only in tuberculosis of the adrenals, but also as a consequence of long continued wasting diseases or from septic emboli. We should remember that adrenalin no more represents all of the activities of the suprarenal bodies than does morphin represent all the activities of opium. In a classic case of advanced Addison's disease adrenalin produced no beneficial results, whereas 15 to 45 grains daily of an efficient extract of the adrenals produced marked improvement so that the patient returned home and partially resumed his avocation. He omitted the use of the extract and gradually returned to his former state of intense asthenia with a systolic pressure of 60 mm., and again improved when the extract of the adrenals was resumed; he is still living although six years have elapsed.

Again we humbly agree with Dr. Sajous that the treatment of Graves' disease should vary with its causation, duration, and that excessive dosage of the thyroid extract produces toxic effects, chiefly causing disturbances of the metabolism and of the cardiovascular system. It is a matter of common observation that different preparations of the extract of the thyroid given in the same doses produce different effects, indicating the urgent need for standardized preparations not only of thyroid extract, but all ductless gland preparations.

Dr. C. R. Jones, Pittsburgh: Dr. Sajous has brought this subject before us in a manner which has impressed all of us with the wonderful possibilities in the study of the subject of the endocrine glands and their secretions and has, I hope, created in the mind and desires of all of us some further determination to study this subject. Following this idea, about two years ago, a group of physicians in Pittsburgh organized a small society or club and felt they were honoring themselves by calling it the Sajous Club. In the meetings of the club we have endeavored to study more carefully by the group method the various cases which seem to be accompanied by endocrine disturbances. Our fundamental studies began with the various theories and writings on the subject of heredity by August Weismann in the endeavor to prepare ourselves for the study of the work of such men as Dr. Sajous. We all appreciate Dr. Sajous' paper although we may not feel competent to enter into its discussion.

Dr. Jacob Rosenbloom, Pittsburgh: In connection with the use of the pituitary secretion in diabetes insipidus I might mention a case in point, that of a boy of 12 who since he was 3 years of age has been urinating from nine to twelve liters of urine a day.

The specific gravity was never above 1.003. By the administration of pituitary extract hypodermatically the urine was decreased to 2½ and 2 liters; the specific gravity advanced to 1.015. If sodium chlorid were given before the injection the kidneys could not concentrate the urine; given following the injection concentration was accomplished. This striking effect is invariable.

Dr. Sajous, closing: I wish to thank the gentlemen who have so interestingly discussed my paper. In answer to Dr. Cohen, I would suggest that concrete data rather than expressions of opinion are needed to eliminate the existing confusion in the whole domain of endocrinology. A vast array of such data is now available to all of us, and it is only by grouping them logically and subjecting the whole to analytical reasoning that we can attain the truth. Present methods of study, which tend to base conclusions on a few facts, cannot but breed such a state of things as now exists. In answer to Dr. Daland I would state that as he will see in my work on the "Internal Secretions," my experience entirely supports him in the use of adrenal gland instead of adrenalin in the treatment of Addison's disease. Dr. Jones' kind reference to the formation of Sajous clubs in this and other cities leads me again to express my appreciation, but also to urge that such clubs should not aim to sustain my views but to study and analyze seriously the whole question with the object of determining which of the theories available is sound or whether any theory at present at our disposal approximates, or tends toward, the truth. Such an attitude will best serve our needs and its adoption will augur well for the future.

SOME BENEFICIAL RESULTS OF SCHOOL MEDICAL INSPECTION *

WILLIAM W. McFARLAND, M.D.
PITTSBURGH

We have practically completed our seventh year of school medical inspection in the city of Pittsburgh. It was originally a municipal project, but on the passage of the school code it became a joint organization, the city retaining supervision and control of the contagious work, the board of education, through the department of hygiene, supervising the physical examinations. Some of the resulting subdivisions of the work are handled jointly; other subdivisions are handled by the city or the board of education, depending on the nature of the work.

The writer has been in field service since the inception of medical inspection, practically in the same school district. It follows that many pupils of the primary grades in 1910 are still under his observation as high school pupils, consequently he feels that he can speak with some authority as to results accomplished in that time. Many features of this work must necessarily be omitted, such as discussion of vaccination, investigation of contagious suspects, follow-up work in regard to remedying physical defects and discussion of the work of the various clinics.

For several years the city and the board of education have distributed milk to underfed and tuberculous children. It is encouraging to note what a pint of milk daily, given in the schools at regular hours, will do for these children. Two, three, or even five pounds a month is not an uncommon increase in weight, and with that comes rosy cheeks, better resistance and an increased interest in school work. I have frequently taken an inventory of the breakfasts eaten by the kindergartners, and, judging from the miscellaneous assortment of straw foods fed to children, still infantile in their development. in 50 per cent. of cases without milk, it would be a health measure to give even some of the children of the wealthier families a pint of milk during school hours.

Much has been written on contagious diseases, so I will only briefly discuss some phases. Where a thorough system of medical inspection is in force, diphtheria is no longer feared as an epidemic disease. Previous to medical inspection it was not uncommon to have four or five cases develop in a class room from a single exposure; now it is uncommon to have more than one case under the same circumstances. This decrease is due to the practice of culturing at once all children exposed to clinical cases or carriers, and also to the culturing of all cases of sore throat before readmission to school. Any child who is absent because of sickness cannot be admitted without the medical inspector's approval. This inspection of absentees also detects the scarlet throat, the desquamating child, and other contagious conditions.

Scarlet fever is harder to control than diphtheria because of its higher degree of contagion and the occasionally unrecognized mild case. In practically every instance where a pupil is in school within twenty-four hours of the diagnosis, other cases have developed within the accepted incubation period. The contagion seems to be at its height in the first week of the disease, decreasing gradually with the subsidence of the angina. The writer is convinced that scarlet fever is not contagious in the late desquamative stages, providing there are no discharges from the nasal or aural cavities, and no inflammatory condition of the throat remains. I know of two cases, in one of which a class room was exposed for nine days to an

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* Read at the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

undetected scarlet fever patient who was literally peeling, and no harm resulted. In another case, there was a three-day exposure, and no cases developed. I know of other instances in which children in the desquamating stage have infected others, but I am firmly convinced that desquamation, per se, is a very negligible factor in the transmission of this disease.

Now, just what effect has school medical inspection had on these two conditions from a municipal viewpoint? Statistics are available from 1903. In the eight years preceding medical inspection we averaged per year 784.7 cases of diphtheria with 129 deaths, a case mortality of 16.4 per cent. In the succeeding six years with medical inspection, we averaged 1443.8 cases, with 156.6 deaths; a case mortality of 10.8 per cent.

In scarlet fever, previous to medical inspection we averaged 963.8 cases per year with 79.3 deaths, a case mortality of 8.2 per cent. Following medical inspection we averaged 1807.6 cases with 86.1 deaths, a case mortality of 4.7 per cent.

SCARLET FEVER—PRECEDING SCHOOL INSPECTION

Year	Cases	Deaths	Case Rate per 100,000	Death Rate per 100,000	Case Mortality, Per Cent.
1903	874	70	246.9	19.8	8.0
1904	677	40	191.2	11.3	5.9
1905	1,094	162	293.7	43.5	14.4
1906	835	59	214.1	15.1	7.1
1907	722	39	179.0	9.7	5.4
1908	1,212	82	232.5	15.7	6.7
1909	1,156	67	218.8	12.6	5.7
1910	1,141	116	213.6	21.7	10.1
Yearly average	963.8	79.3	223.7	18.6	8.2

SCARLET FEVER—FOLLOWING SCHOOL INSPECTION

Year	Cases	Deaths	Case Rate per 100,000	Death Rate per 100,000	Case Mortality, Per Cent.
1911	819	54	150.9	9.9	6.5
1912	1,506	60	273.2	10.8	3.9
1913	2,581	144	462.7	25.8	5.5
1914	3,900	187	690.4	33.1	4.7
1915	1,470	54	256.9	9.4	3.6
1916	670	18	114.2	2.1	2.6
Yearly av'ge..	1,807.6	86.1	324.7	15.1	4.7

DIPHTHERIA—PRECEDING SCHOOL INSPECTION

Year	Cases	Deaths	Case Rate per 100,000	Death Rate per 100,000	Case Mortality, Per Cent.
1903	1,232	215	364.8	60.7	17.4
1904	999	166	282.2	46.9	15.6
1905	505	96	135.6	25.8	19.0
1906	710	136	182.1	34.9	18.0
1907	695	108	172.3	26.8	15.5
1908	680	97	130.4	18.6	14.2
1909	560	81	106.0	15.3	14.4
1910	897	133	167.9	24.9	14.8
Yearly average	784.7	129	192.6	31.7	16.4

DIPHTHERIA—FOLLOWING SCHOOL INSPECTION

Year	Cases	Deaths	Case Rate per 100,000	Death Rate per 100,000	Case Mortality, Per Cent.
1911	1,149	128	211.8	23.5	11.1
1912	1,495	175	271.2	31.7	11.7
1913	1,684	208	301.9	37.2	12.0
1914	1,614	156	285.7	27.5	9.1
1915	1,496	153	261.5	26.7	10.2
1916	1,225	120	208.9	20.4	9.7
Yearly av'ge..	1,443.8	156.6	256.8	27.8	10.8

Note that in both diseases there is an approximate average yearly increase of 100 per cent. in reported cases and a decrease of 40 per cent. in case mortality.

Considering both conditions, the increase in the number of cases is due to increase in population and the discovery by the medical inspector of cases which would have been concealed or not diagnosed before school inspection. The reduction of 40 per cent. in the case mortality in both conditions is due to improved methods of treatment and early diagnosis, the school medical inspector taking credit for the latter in many instances. Statistics can be used to prove almost any contention; even that medical inspection is a failure, as one might judge by the marked increase in cases; but we who are in field service know that we find at least 20 per cent. of all contagious diseases which would not otherwise have been reported. One other feature which may help in explaining the increased number of cases is that the introduction of school medical inspection and the "Movie" were at approximately the same time.

We feel that our best results in contagious work are with these two conditions mentioned, and with mumps, and whooping cough. In measles we seem to make little headway. If it were practical to exclude for three days all pupils with acute nasal conditions we might accomplish something. By the time one can see Koplick's spots the damage is done to others exposed. We do limit the spread of infection somewhat by exclusion of susceptible contacts in the family at once, but it is discouraging sometimes to see measles sweep through a school, regardless of all precautions. In all cases of measles, particularly Rotheln, enlargement of the postauricular glands is a constant late symptom, and we detect many a concealed case on application for readmission after a few days' absence. This enlargement may occur also in pediculosis, eczema and other scalp irritations, and in otitis, but the history usually clears up the diagnosis.

In many cases of chickenpox there are so few pustules visible that a pupil may never miss a day of school, infect many others, and still remain undetected. I have noticed that in practically all cases, no matter how mild, one or two pustules will be found on the scalp.

Now, a few words as to our results in having physical defects remedied. Probably 60 per cent. of pupils who have defective teeth, hearing and vision, and 25 per cent. of the pupils recommended for tonsillectomy and adenectomy are given attention. Most of the heart, lung, orthopedic and nervous cases are under treatment. The board of education maintains eight dental clinics, a psychological clinic for study and diagnosis of mental defectives, and a roentgen-ray clinic for diagnosis of tuberculosis and other conditions. An eye and a skin clinic are possibilities of the near future. These clinics are all in the hands of capable, trained men. Any case can be referred for diagnosis, but only the deserving poor are given treatment; their financial condition being passed on by the school physician, the principal and the visiting nurse.

One of the most remarkable features after the correction of physical defects is the rapid increase in school progress due to increase in physical and mental efficiency. This is noticed in many conditions, but the writer has been most impressed with the results after removal of tonsils and adenoids. Many pupils previously classed as retarded or suspected of being mental defectives have progressed normally or shown exceptional ability in school work after nose and throat conditions have been corrected.

Practically all pupils who are mouth breathers from nasal obstruction or who have defective hearing are retarded more or less. Bad cases of unremedied nasal obstruction seem to find themselves about the sixth year of school life, about the age of twelve, and progress normally from that time on. Evidently some change occurs in the nasal mucous membrane, whether due to atrophy of the adenoid tissue or to gradual enlargement of the nasopharynx without accompanying growth of the adenoids, I am not prepared to state. These children, however, do not make up the time lost in their earlier school life.

Many advances in sanitation and hygiene have taken place in our public schools since the advent of school inspection. Drinking fountains have been installed. We have individual pencils, pens, towels, etc. In both equipment and construction, the modern city school building is practically perfect as regards the details of sanitary and hygienic construction.

Particular attention is being given to regular physical exercise, folk dances, and organized games in all grades, the end results of which are better physiques, self-confidence, agility and clean competition in athletics.

Last, but not least, is the gradually increasing favorable attitude of the public to what in the beginning they were prone to call fads. As long as Christian Scientists, antivaccinationists, chiropractors, etc., are in existence, we will have opposition to progressive health measures; and when they are no more, other cults will take their places. Even the five and ten cent stores do their share of harm by placing eye glasses on their bargain counters.

The most urgent need in medicine today is unity of the profession, political unity at that, in order that we may demand and by our organized strength obtain proper health regulations. But the average physician's political interest is about on a par with his business ability, and progress in health legislation is very slow.

The school medical inspector has much with which to contend, but on the whole, the public appreciates our work and cooperates in many ways. Many parents promptly notify the schools on suspicion of contagion, either in their homes or in a neighbor's, and do all in their power to prevent dissemination of infection. Recognizing the possibility of diphtheria carriers, sore throats are given more careful attention than in the past.

Remediable physical defects are given serious consideration and in approximately 50 per cent. of the total are remedied. The public appreciates the modern methods of health promotion due to improved conditions in the schools. They are beginning to realize that the schoolroom is the safest place for the child to be, and that infection is more apt to come from other associations. Physical training is becoming more and more popular as the beneficial results become evident.

Month by month, medical inspection of schools has progressed, always forward. Much is yet to be desired, but the future is bright. The pessimist and knocker are always with us, but their knocks have become boosts for the investigators of our work cannot avoid seeing the manifold evidences of the good results of properly conducted school medical inspection.

In closing, may I briefly sketch ideal medical inspection, as I see it:

1. A salary conducive to a whole time school inspector.

2. Two buildings with a maximum of 2,000 pupils to each inspector.

3. Complete equipment in each building for diagnosis and simple treatments, and the power to use skin tests, such as von Pirquet and Schick.

4. A graduate nurse for each district.

5. Investigation and quarantine control of all contagious diseases in each school district, whether school cases or others.

6. Central clinics for diagnosis and treatment as mentioned earlier.

7. Supervision of parochial schools in the same manner.

8. Private schools, academies and Sunday schools to be under observation and control of the medical inspector in that district.

9. A physician on the teaching corps of each high school, to do routine work as outlined, supervise athletics as a physician and lecture on sanitation, hygiene and first aid.

10. Politics must be eliminated absolutely from health work; efficiency and personality must be the standard in all matters pertaining to public health in general and school medical inspection in particular.

East End Trust Building.

ECTROMELUS, OF THE PARTIAL (HEMIMELUS) TYPE. REPORT OF A CASE

T. M. M. FLYNN, M.D.
ERIE

Admitted to my service, maternity ward, St. Vincent's Hospital, April 2, 1917, 1 p. m., Mrs. E. S., white, aged 22, nativity United States, Para II, patient in active labor on admission to hospital, was delivered of a 7½ pound male child at 1:50 p. m., less than one hour after admission. Length of first stage of labor as elicited from patient's statement was one hour. The second stage occupied less than one half hour. There was no actual third stage, as the placenta followed the child immediately. The presentation was cephalic, the position left occipito-anterior, the amount of amniotic fluid did not appear greater than normal, but was thick, brownish-green, and emitted a rather foul odor.

The placenta was somewhat larger and thicker than normal, being about 14 cm. in diameter, and nearly 2.5 cm. thick. The maternal surface was thickly studded with white infarcts, both nodular and linear. The membranes were normal in appearance, but extremely friable. On inspection, the birth of secundines seemed complete. The implantation of the cord was eccentric. Within ten minutes from the birth of the placenta, the patient suffered a severe hemorrhage, due to extraordinary relaxation of the uterine wall, which yielded finally to a hot saline intrauterine douche, and ergot hypodermically. The normal tonus of the uterine muscle did not fully manifest itself until nearly 3 p. m., the same day. There were no vaginal or perineal lacerations. The cervical tears were slight, and I did not consider them in any way contributory to the hemorrhage postpartum.

Aside from the partial agenesis of the upper and lower extremities, the child seemed robust and healthy. It cried lustily, and moved its defective extremities freely. Micturition and defecation occurred shortly aftr delivery. The skin was clear, healthy in appearance and without blemish. The depression at the bridge of the nose, usual in most new-born infants, was markedly accentuated in this one, sufficiently so to arrest the attention. Inspection of nostrils and mouth revealed a blood-red appearance of the lining mucous membrane, while on the frenum of the tongue and upper and lower gums several small ulcer-like areas were noted. These were yellowish gray encircled by a red areola. None of them were greater than one half centimeter in diameter, and were similar to the lesions found in aphthous stomatitis. Eight hours postpartum the child developed "snuffles." On the stump of each extremity was a small "flesh bud," about 1½ cm. in thickness and nearly 3 cm. in length, there being no suggestion of nail formation. On the upper extremities each "bud" was situated on the outer surface 4 cm. from the end of the stump, while on the lower extremities the "buds" were on the posterior surface and from 4 to 5 cm. from the end of the stump. The mention of a small dimple or depression in the distal end of each extremity completes a description of the deformity in question.

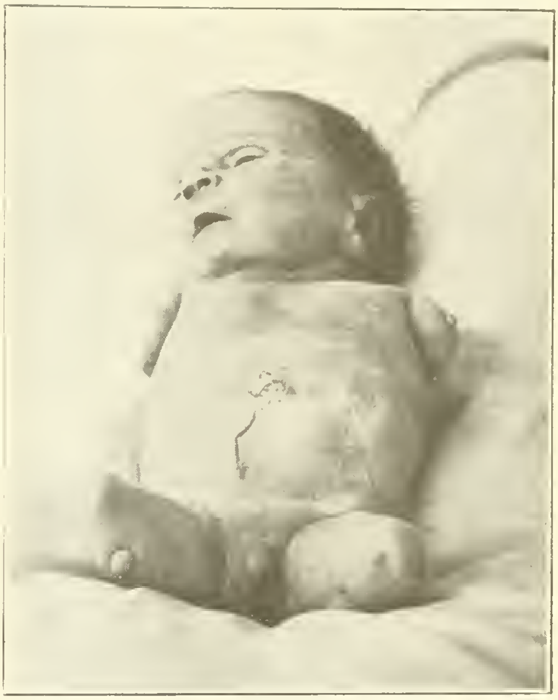

Figure 1.

The child took the breast eagerly from the first, and, with the establishment of lactation which took place the third day postpartum, seemed to thrive.

The following excerpts from the clinical chart are herewith appended:

April 6, 1917, child restless, not nursing well; 7:30 a. m., temperature 99 F.; noon, temperature 100.2 F., respiration 55, rapid and difficult; 8 p. m., temperature 104.4 F., respiration 62, slight cyanosis. Colonic lavage resulted in soft green stool. Midnight, temperature 103 F.

April 7, 1917, 4 a. m., temperature 102.2 F., soft green stool, curdy, child refuses to nurse; 8 a. m., temperature 103.4 F., respiration 72, cyanosis marked; 12:30 p. m., temperature 103.3 F., liquid green stool, respiration 76, dyspnea marked; 3 p. m., child died.

At autopsy the following conditions were reported, the abnormalities only being mentioned: Ectromelus babe, humerus and femur perfectly developed on each side; entire absence of parts below end of each humerus and femur. Heart, large; muscle wall very thick and hard. Lungs, very much congested, particularly at bases where alveoli are filled with pus. Spleen, kidneys, pancreas, liver, passively congested. Appendix very long (6.5 cm.) and kinked. A Wassermann test, attempted with post-mortem blood, was not successful. Clinical diagnosis was congenital syphilis (?). Pathological diagnosis was purulent pneumonia.

For the mother, the puerperium was uneventful. Her Wassermann test, made on the eighth day postpartum, was negative. On the eleventh day, she was discharged in good condition.

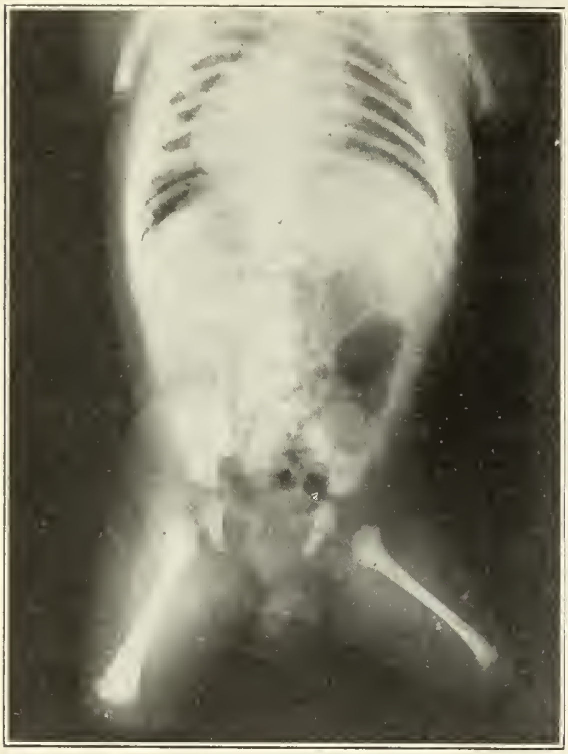

Figure 2.

In the bibliography of this condition, only a few of the many interesting articles concerning it are listed below.

I wish to acknowledge my indebtedness to Dr. Edith MacBride for her photograph of the cadaver (Fig. 1); to Dr. George F. Stoney for his assistance at necropsy; and to Dr. B. S. Putts, radiographer, for his very excellent roentgen-ray plate (Fig. 2).

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801 German Street.

ONE PHASE OF HOME DEFENSE

"Protect the defective children, provide for their training and proper care, and you will lessen the burden of dependency and delinquency." This is the gist of the advice contained in a new report on Mental Defectives issued by the Children's Bureau of the U. S. Department of Labor, and appearing with special timeliness now that war conditions may tend to make more serious the problem of delinquent and dependable children.

The report is based on a study of the social conditions of 212 mental defectives in New Castle County, Delaware. A total of 175, or more than four-fifths of these, were in need of public supervision or institutional care because of bad home conditions, physical helplessness, or pronounced anti-social tendencies, and only twelve of them were provided for in an institution adapted to their care. Twenty-six of the defective children were in industrial schools for delinquent children, and of these the report says:

"Institutions for the care of delinquent children are greatly handicapped by the presence of defectives, since they require special attention and exert a bad influence over the normal children. After a short period of residence these defectives are returned to the community without sufficient supervision."

Other defective children with delinquency records were at large in the community; in all, ninety-eight of the 212 defectives studied were delinquent or immoral or difficult to control.

The report suggests that, while any program for the care of mental defectives must have as its central feature suitable institutional provision offering training or custodial care according to the needs of the individual, other activities are equally essential. It is pointed out, for example, that institutional care is not necessary for all mentally defective children, for, contrary to the popular impression, it is found that there are certain types who safely can remain at home provided thev have the attention and study which they deserve. However, special provision should be made for their safety, care, and education, and outpatient work of an institution for the feebleminded, in cooperation with schools, social agencies, and families, is referred to as a new and important method of providing in the most humane possible way for such children.

The possibilities of industrial training by which certain types of defectives may gradually become in part self-supporting and the importance of providing facilities for mental examination and diagnosis of doubtful cases are also brought out in the report.

FUNCTIONAL TESTS IN CHRONIC NEPHRITIS

Christian discusses in the September *International Clinics* the various tests to determine the functional capacity of the kidney, normally the phthalein output, blood, urea, nitrogen, index of urea, excretion and specific gravity of the urine. The last mentioned is a simple means of determining the functional capacity of the kidney. The kidney normally accommodates itself to different kinds of urea complexes by excreting a more or less concentrated urine, a urine which pretty closely parallels the fluid intake. If, however, the kidney is injured it does not accommodate itself so well or so promptly, so that curves representing the specific gravity taken every two hours instead of showing marked variations flatten out in proportion as the kidney is diseased. Christian believes that the functional tests are useful in determining prognosis, to a certain extent treatment, and in some cases diagnosis when there is a question of early nephritis, but they are mainly helpful from the point of view of prognosis.

THE PENNSYLVANIA MEDICAL JOURNAL

Published Monthly **Official Organ of the Medical Society of the State of Pennsylvania**

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ATHENS, PA., DECEMBER, 1917

CHRISTMAS THOUGHTS

"But Christmas is not only the mile-mark of another year, moving us to thoughts of self-examination: it is a season, from all its associations, whether domestic or religious, suggesting thoughts of joy. A man dissatisfied with his endeavors is a man tempted to sadness. And in the midst of the winter, when his life runs lowest and he is reminded of the empty chairs of his beloved, it is well he should be condemned to this fashion of the smiling face. Noble disappointment, noble self-denial are not to be admired, not ever to be pardoned, if they bring bitterness. It is one thing to enter the kingdom of heaven maim; another to maim yourself and stay without. * * *

"To be honest, to be kind — to earn a little and to spend a little less, to make upon the whole a family happier for his presence, to renounce when that shall be necessary and not be embittered, to keep a few friends but these without capitulation — above all, on the same grim condition, to keep friends with yourself — here is a task for all that a man has of fortitude and delicacy. * * *

"There is an idea abroad among moral people that they should make their neighbors good. One person I have to make good: myself. But my duty to my neighbor is much more nearly expressed by saying that I have to make him happy — if I may."

(A Christmas Sermon, Robert Louis Stevenson.)

WHAT CAN WE DO FOR OUR PART?

The medical profession now has many important problems before it and the coming year should see the medical organizations more and more efficient. Most of the county societies have decided to remit the annual dues of members in military service and also to protect as far as feasible their practice. Not a few of the societies have promised to treat without charge the families of the soldiers. This all makes added work for the individual physician and especially for the secretaries of county societies.

Let each one of us ask himself the question, How can I best help my county society, the state society, the medical profession and my country? The best way to begin is for each one to sit down and write out a check for his 1918 dues and mail it to the secretary of the county society. Let us not wait for him to send us a bill; that takes time and costs three cents unnecessary postage. We know what the dues are; let us not put up that flimsy excuse "I never received any bill." We always appreciate the patient who cheerfully takes out his pocketbook and asks, "How much do I owe you, Doctor?" Let us try this method with our county society secretary, and remember that these dues are due January 1 and should be paid before that date.

The second thing for each one of us to do is to attend the next meeting of his county society and help in making it interesting and helpful. The profession in Pennsylvania has many things to look after in its own interests and in the interest of the community. The Workmen's Compensation Law needs to be changed so as to make it fairer to both physician and workman. There is the matter of health insurance which is being crowded upon the attention of physicians and legislators; this should be studied pro and con so that we as physicians can discuss it intelligently with legislators. Then there are the drugless healers and the thousand and one attempts to break down our Medical Practice Act. In all these things the individual physician should act through the county society and the county societies through the state societies. The medical profession of the state should be represented by a central committee authorized to speak officially for all legal practitioners in the state. Individual physicians and individual societies must learn to work in and through the central committee if the medical profession is to hold its own in the swirl of the many conflicting influences at work in society and in legislation.

SIX MILLION LOAVES OF BREAD PER DAY

A physician who spent nearly a year in England caring for the sick and wounded told the writer that the greatest handicap for England to overcome is the drink question, and in fact their own Premier, David Lloyd George, publicly said: "We are fighting Germany, Austria and Drink, and, as far as I can see, the greatest of these three deadly foes is Drink." The English people are to be praised for much that they have done and are doing, but our people could pay the heavy taxes and go without sugar and bread in order to send it to our Allies much more resignedly if the English government were not giving the preference to the brewers over the people for food in the matter of the distribution of sugar and grain, as declared by the editor of the *Spectator* and other responsible parties. We deny ourselves the necessaries of life while they are used both in England and in this country to make that which lessens the output of munitions and the efficiency of our soldiers.

Commissioner Hoover is very properly asking us to conserve food, to have our meatless and wheatless days, but we have not heard of his suggesting that we have any beerless days. Yet we have it on good authority that the grain now used — no, wasted and worse than wasted — in the manufacture of beer would produce more than 6,000,000 one-pound loaves of bread each day. For a week the writer has been unable to purchase a pound of sugar, but beer is plenty and is debauching our soldiers (in spite of the honest efforts of the government to protect them) and those who are to be our future soldiers. Pennsylvania physicians are loyal citizens, anxious to aid the President in the successful prosecution of this cruel war that has been forced on us, and in all kindness and seriousness we beg him to prohibit the use of sugar and grain in the manufacture of alcoholic beverages during the continuance of the war. We know that we will need all the food we can get. We as physicians know that we do not need beer. If we are to have either whisky or beer as a medicine or a beverage give us the former, but we are better without either. It is said every day that the outcome of the war is wholly a question of food, fuel and supplies. If this be so why does our government allow our grain to be wasted in the brewing of beer which in turn lessens the efficiency of our soldiers, our farmers, our miners, our mechanics, and every other worker who uses it?

THE MEDICAL PROFESSION AND THE SELECTIVE SERVICE

An editorial with the above title in the *Journal of the American Medical Association* for November 24, is given herewith, as it explains an important matter. Further details regarding the selection of the medical advisers to the governors may be found on page 1807 of the Journal mentioned above. The physician selected for medical adviser to the Governor of Pennsylvania is Dr. Edward Parker Davis of Philadelphia.

The newspapers have acquainted our readers with the important facts concerning the next call under the selective service law. There is one factor of the new regulations in which the medical profession is especially interested—the medical advisory boards. The methods of determining the physical fitness under the old regulations were not altogether satisfactory; the new regulations are intended to correct them. Under the new regulations the preliminary examination is still to be made by the examining physician; but "if the examining physician is in doubt as to whether the registrant is to be held for military service, or if the examining physician finds the registrant to be qualified for military service and either the Government Appeal Agent, the registrant, or two members of the Local Board, are dissatisfied with such finding, such examining physician, Government Appeal Agent, members of the Local Board, or registrant may apply to the Local Board to have the registrant sent before the nearest Medical Advisory Board (provided in Sections 29 and 44 hereof) for an exhaustive reexamination."

Under the old regulations, such appeal would go direct to the district appeal board, and the physician of the district board would make the second examination. In many instances this physician associated with himself experts to assist him in making these examinations. To all intents and purposes the new regulations provide just such a group of men as this, but not connected with the appeal board. The doubtful cases, instead of being referred directly to the appeal board, as heretofore, will be referred to this medical advisory board. A reference to the report of the committee appointed by the American Medical Association, which appears elsewhere in this issue, gives the principal points in connection with the establishment of these boards.

In the foreword to the publication of the new regulations, President Wilson says: "I ask the doctors of the country to identify themselves with the medical advisory boards which are to be constituted in the various districts throughout the United States for the purpose of making a systematic physical examination of the registrants." As will be noted in the report above referred to, a physician has been appointed in each state on whom will rest the main responsibility for the selection of the personnel that shall constitute these boards. The responsibility that rests on these men is very great. But it does not rest on these men alone; it rests on the entire medical profession. The President has called on the members of the medical profession to assist in this work. The Provost Marshal General has accepted the advice and assistance of those representing the medical profession. Those physicians called on by the state adviser to assist him in making the selection of those who shall compose the medical advisory boards should feel it a duty to respond by giving their best advice as to the men who are qualified for this work. Let us not forget that while the governors will make the nominations, these medical advisers and those who cooperate with them will be responsible for the success or failure of this plan of passing on the physical fitness of the young men of the country for military service.

AN APPRECIATION

The secretaries of the various county societies, many of them serving without financial compensation, have been very loyal to the state society and its officers. Probably none of them realize how much their hearty cooperation lessens the work of the state secretary, who at times finds it impossible to keep up to date with the work of the office no matter how much assistance he may employ. The work of receiving the *per capita* assessment becomes an avalanche during the month of March, so much so that other work has to be neglected. Each receipt has to be carefully compared with the records to see whether it be for a new member or a renewal. If for a former member, the address has to be carefully compared with the former address and if there be any change it has to be corrected in six different places, it being necessary sometimes to write directly to the member for verification before making the change. This will emphasize the importance of the secretaries giving addresses accurately.

Secretaries who urge the early payment of the annual dues and promptly report the same render the state secretary and probably themselves a double service. "Promptly reporting" does not necessarily mean reporting each member as soon as paid, but rather the sending in of receipts, always to be accompanied by checks, as soon as a reasonable number have paid.

Without wishing to disparage the promptness of other secretaries or the loyalty of other members, it is desired to call attention to the constant promptness and loyalty of the Bucks County Society and her efficient secretary, Dr. Anthony F. Myers. In 1914 the state secretary received from that society the *per capita* assessment for the following year for 12 members on November 9; in 1915, on November 20 for 42 members; in 1916, on November 22 for 34 members, and on November 22, 1917, for 40 members.

Each year there are a number of worthy members who neglect to pay their dues in time to have their names appear in the printed roll of members. This is a distinct loss to the members and the occasion of much future correspondence and clerical work in the office of the county secretary, the state secretary and the secretary of the American Medical Association. More than one member has failed to receive some appointment because his name was not found in the printed list of members of his county society as published in the Journal.

The secretary of each local society is requested to read this article at each meeting of his county society whenever any member who has not paid his dues for 1918 is present.

QUESTIONNAIRE REPLIES IMPORTANT

The Medical Section of the Pennsylvania State Committee of the Council of National Defense has sent to the chairman of the auxiliary committee for each county in the state a somewhat elaborate questionnaire relating to all of the medical men in the respective county. Most of the counties had already furnished statistics, but it is found necessary to have this brought up to date in order that the overworked authorities at Washington may ascertain by a glance information regarding each physician in every county of the different states. The various county committees that have not already done so are urged to return this questionnaire to the secretary of the committee, Dr. Charles Scott Miller, 515 City Hall, Philadelphia, at the earliest opportunity. Failure to comply will work a hardship to all the physicians in the county where the committee has failed to do this work.

COUNTY COMMITTEES ON PUBLIC POLICY AND LEGISLATION

The officers and members of the several county societies are requested carefully to read the article by Dr. Baldy on page 3 of the October Journal, and the resolutions introduced by Dr. Baldy in the House of Delegates at the Pittsburgh Session, which will be found on page 124 of the November issue. These resolutions were adopted by the House of Delegates.

The report of the Committee on Public Policy and Legislation will be found on page 862 of the September Journal, from which we reproduce three paragraphs:

> The medical profession must be better organized to cope with the manipulation and trickery of such legislative sessions. If we were thoroughly organized and properly led and were loyal to our leader the legislators would not dare ignore our just demands, and we could easily secure respectful attention.
>
> We also recommend that the chairmen of the county legislative committees be associate members of the state committee so that there may be better cooperation between the latter and all parts of the state; that the appointment of these committees should be made with an appreciation of their importance and that men be selected who are in closest touch with their representative and senator, and can and will best serve our political aims. The value of home work is not appreciated.
>
> We recommend that medical societies discuss legislative subjects and be agreed before the legislature convenes. When the state committee acts on the instruction of the state society all organizations should unanimously support it. This year, even after the legislature was in session, some societies took action contrary to that of the state committee, and so instructed their legislators, to our confusion and injury.

It is hoped that each county society will select for members of its Committee on Public Policy and Legislation men who will be willing to work and to work in harmony with the committee of the state society. Only by such cooperation can we hope to protect the interests of the profession and advance the welfare of the commonwealth.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported up to November 26:

Allegheny County: *Removals.*—Joseph W. Beyer from Aspinwall to 1301 South Boston St., Tulsa, Okla.; William A. Hodkinson from Wilkinsburg to 350 South Pegonia St., Los Angeles, Calif.

Beaver County: *New Members.*—Caroline M. Baldwin, Rochester; William F. Beitsch, New Brighton.

Bucks County: *New Members.*—Joseph F. Crouthamel, Souderton; Horace F. Kline, Bristol; Samuel Stoumen, Springtown.

Cumberland County: *New Member.*—James C. Stem, New Cumberland.

Dauphin County: *Removal.*—John J. Mullowney from Paxtang to 5506 Green St., Philadelphia.

Franklin County: *New Member.*—John M. Gelwix, Chambersburg.

Lehigh County: *Removal.*—James H. Paul from Laceyville (Wyoming County) to 2051 Mifflin St., Philadelphia.

Lycoming County: *Removals.*—Woods F. Derr from Williamsport to Renovo (Clinton County); Franklin J. Norris from South Williamsport to Hospital for Insane, Somerset (Somerset County).

Mongomery County: *New Members.*—Katherine S. Hall, Fort Washington; William John Watson, Cheltenham.

Montour County: *Removal.*—Burgers A. Gibson from Danville to Washingtonville.

Northampton County: *New Members.*—Warren J. Bieber, Bethlehem; Clarence E. Deck, Charles W. McClure, Clayton E. Royce, Mitchell Walter, South Bethlehem; Stanley A. Krebs, John H. West, Easton.

Northumberland County: *New Members.*—John S. Mengel, Boyd E. Wilkinson, Trevorton; J. Edward Nickel, Sunbury; Lorenzo B. Zimmerman, Mt. Carmel. *Removal.*—Ralph M. Markle from Harrisburg

(Dauphin County) to 126 South Hanover St., Carlisle (Cumberland County).

Philadelphia County: *New Members.*—John M. Craig, Benjamin F. Diseroad, Melvin M. Franklin, James Kay, Thomas F. Mullen, Frederick J. Voss, Philadelphia. *Removals.*—Charles L. Furbush from Philadelphia to The Woodward, 2201 Connecticut Ave., Washington, D. C.; J. Leon Herman from Philadelphia to Gordonville (Lancaster County); B. Frank Kehler from Norwood (Delaware County) to 316 South Sixteenth St., Philadelphia; Aaron Rivkecs from Philadelphia to 205 Carothers Ave., Glendale, Carnegie (Allegheny County). *Death.*—Mary J. Green (Woman's Med. Coll. of Penna., Philadelphia, '78) in Philadelphia November 3, aged 76.

Potter County: *Death.*—Levi A. Horn (Univ. of Louisville, Kentucky, '94) in Austin, August 15.

Venango County: *New Member.*—Edwin A. Kuhns, Emlenton.

Warren County: *New Members.*—Milton H. Christie, Corry (Erie County); Anna H. S. Flatt, Corydon. *Death.*—Joseph J. Knapp (Coll. of Phys. and Surg., Baltimore, '81) in Youngsville, October 19, aged 63.

Westmoreland County: *New Member.*—James H. Lawhead, West Newton.

PAYMENT OF PER CAPITA ASSESSMENT

The *per capita* assessment for the year 1917 has been received from component county societies since November 2, as acknowledged on page 115 of the November Journal, as follows:

Nov. 6,	Northampton	123–127	6885–6889	$13.75
Nov. 7,	Westmoreland	155	6890	2.75
Nov. 8,	Warren	42–43	6891–6892	5.50
	Northumberland	65–68	6893–6896	11.00
Nov. 10,	Cumberland	43	6897	2.75
Nov. 12,	Beaver	67–68	6898–6899	5.50
Nov. 16,	Montgomery	135	6900	2.75
Nov. 21,	Philadelphia (See Nov. 2, 1917)			2.75
	Franklin	54	6901	2.75
	Northampton	128–129	6902–6903	5.50

The *per capita* assessment for the year 1918 has been received for component societies as follows:

Oct. 25,	Wayne	1–8	1–8	$22.00
Nov. 15,	Bradford	1–10	9–18	27.50
Nov. 16,	Montgomery	1	19	2.75
Nov. 22,	Bucks	1–40	20–59	110.00
Nov. 23,	Venango	1	60	2.75

FOOD INSPECTION IN CINCINNATI

For those interested in public health matters the article in the September *International Clinics* by J. H. Landis has an important place. He gives in some detail the trials and tribulations of the health officer in his effort to bring about the proper protection of perishable foods. He points out that the greatest obstacle to progress in this, as in other public health measures, is the political system prevalent in most of our large cities. As to the business man Landis is convinced that he has undergone a radical change and is now anxious to conform to the health regulations. The results obtained in Cincinnati have been highly satisfactory. Comparatively little time is now required in the police court, where formerly it was an everyday affair.

STATE NEWS ITEMS

MARRIED

Dr. John C. Reed, Duquesne, and Miss Lillian Bennethum, Harrisburg, October 24.

Dr. John Carl Wahl, Scranton, and Miss Ethel Somers, Philadelphia, October 25.

DIED

Dr. James H. Dobbins (Univ. of Pennsylvania, '49) in Bellefonte, recently, aged 90.

Dr. Joseph George Church (Univ. of Pennslyvania, '87) in Shenandoah, October 19, aged 52.

Dr. Theresa G. Breene Baum (Univ. of Pittsburgh, '10) in Oil City, August 5, aged 38.

Dr. Wilson J. Orr (Jefferson Med. Coll., '73) in Springdale, November 4, from senile debility, aged 85.

Dr. Frederick B. Elliott (Univ. of Pittsburgh, '96) in Pittsburgh, November 4, from heart disease, aged 45.

Dr. Andrew N. Falkenstein (Coll. of Phys. and Surg., Baltimore, '87) in Glen Rock, October 22, aged 63.

Dr. Thomas C. Van Tries (Univ. of Pennslyvania, '68) of Bellefonte, in Pittsburgh, August 1, from pneumonia, aged 78.

Dr. Robert S. Stahle (Univ. of Maryland, Baltimore, '82) in New Market, November 2, from disease of the liver, aged 59.

Dr. Abraham L. Lehman (Medico-Chirurgical Coll., Philadelphia, '99) of Philadelphia, in Wallace, Idaho, October 21, aged 52.

Dr. Oliver R. Diehl (Harvard Med. Sch., '15) in Bryn Athyn, July 14, from endocarditis following a streptococcus infection, aged 27.

Dr. Horace Edward Bunce, Jr., (Western Pennsylvania Med. Coll., Pittsburgh, '00) in Pittsburgh, October 28, from septicemia, aged 47.

Dr. George Walter H. Conrad (Hahnemann Med. Coll., Philadelphia, '13) Philadelphia, in San Antonio, Texas, October 30, from abscess of the brain, aged 29.

ITEMS

Dr. Edward A. Schumann has been elected lecturer on obstetrics in the Jefferson Medical College.

Dr. Wallace R. Hunter, Erie, has been reappointed a trustee of the State Hospital for the Insane at Warren.

The American Association for Labor Legislation will hold its eleventh annual meeting in Philadelphia, December 27-29.

Drs. Samuel Wolf and Rae S. Dorsett have been appointed members of the staff of the Philadelphia General Hospital.

The Clearfield County Medical Society, during the months of August and September, collected $116.93 to be turned over to members absent in the service.

Dr. Alonzo E. Taylor, Philadelphia, is a member of the War Mission from the United States now in London, representing the Food Administration Committee.

The Aid Association of the Philadelphia County Medical Society on November 12, elected Dr.

Samuel D. Risley president, and Dr. Lewis H. Adler, Jr., secretary.

The Somerset County Medical Society Call states that one fourth of their members were in attendance at the Pittsburgh Session, and that "none will regret their going."

Dr. George B. Moreland, Pittsburgh, was elected president of the Homeopathic Medical Society of the State of Pennsylvania at its fifty-fourth annual session in Scranton in September.

Osteopathic Practitioners are not exempt from the Act of March 30, 1917, providing for the licensing of persons engaged in optometry, according to a ruling given October 31, by the Attorney-General's Department at Harrisburg, in which it is held that "if it had been the legislative intent to exempt 'osteopaths' from the requirements of the Act, such exemptment would have been expressed in special terms to that effect." "Chiropractics" also come under the law. The opinion mentions that those engaged in the practice of medicine and surgery are specifically exempt.

Are They Crazy?—Patients in the State Hospital for the Insane at Warren are knitting for the Red Cross. Dr. H. W. Mitchell, the superintendent, is also president of the Warren County Red Cross Society.

The Fifth Conference of Industrial Physicians and Surgeons, Department of Labor and Industry, was held in Harrisburg on November 20. The proceedings will appear in the Pennsylvania Medical Journal for March.

Capt. John A. Hawkins, Pittsburgh, who has been in command of Battalion 13, in the Allentown Auxiliary Camp at Guth's Station, where the men dug themselves into the ground, received a Major's commission on November 13.

The Philadelphia Pediatric Society held a meeting on November 13 to devise means for preventing and arousing interest in the infant mortality percentage of the country. Last year 5,200 babies under 1 year of age died in Philadelphia.

Dr. E. M. Green, clinical director of the Georgia State Sanatorium, has been elected superintendent of the State Lunatic Hospital at Harrisburg, to succeed Dr. Henry M. Orth, who will retire after twenty-seven years' service, on December 1.

Dr. John A. McKenna, Lansdowne, has been commissioned captain in the Medical Officers' Reserve Corps, and assigned as surgeon of the 312th Field Artillery at Camp Meade. At the beginning of the war he was commissioned first lieutenant and has since been in training at Fort Oglethorpe.

The Hawkins Ambulance Fund.—On November 17, $1,009 had been received by the committee of the Allegheny County Medical Society for the Dr. John A. Hawkins Ambulance Fund. Contributions were to be received up to November 22, at which time the money was to be turned over to Major Hawkins.

Dr. George Albert Parker of Newtown is at present at Birmingham, England, where he and another American doctor are working in a 1,000-bed hospital. They are royally treated by the English people, and everything that can be done for their pleasure and comfort is done. (The Bucks County Medical Monthly.)

Major Henry D. Jump, according to a recent order from the office of the Surgeon-General, was ordered "to Louisville, Ky., for conference with the Kentucky Committee on Medical Defense, and on completion to Indianapolis and Memphis, Tenn., to confer with state committees on Medical Defense and itinerant boards, and on completion to his proper station."

Physicians Needed.—The Pennsylvania State Committee of the Council of National Defense, Medical Section, announces that the committee has applications at this time pending to fill the following positions in hospitals and institutions in or near Philadelphia: Medical: Superintendent of hospital, salary $1,500 per annum; two clinical assistantships, psychopathic, salary $600 per annum; assistant bacteriologist, salary $1,000 per annum; anesthetizer, salary $30 per month. Surgical: Assistant surgeon, salary $3,000 per annum; visiting surgeon, dispensary, no salary; visiting ophthalmologist, no salary; visiting laryngologist, no salary. Internships, general internships, resident physicians in special hospitals, etc. Applicants for these positions should communicate with the secretary, Charles Scott Miller, M.D., giving school and year of graduation, qualifications, credentials, etc., and salary desired.

Lieut. Scott D. Gleeten, M. O. R. C., has been ordered to Philadelphia for a course of instruction in the School of Plastic and Oral Surgery, Evans Dental Institute. The school is distinctively an all-Philadelphian school, and embraces all medical and dental colleges in the city. Its purpose is to specialize the study in methods of repair of the face and jaw of men before going abroad for war service.

The Bureau of Medical Education and Licensure will hold examinations as follows: Medical, Philadelphia, January 8, 9 and 10; massage and allied branches, Philadelphia, January 8 and 9; drugless therapy, Philadelphia, January 8 and 9; bedside licensing, Philadelphia, January 11 and 12; chiropody, Philadelphia, January 8 and 9. The State Board of Dental Examiners announced examinations in Philadelphia and Pittsburgh, December 4, 5 and 6.

Another Medical Defense Case Won.—Medical Defense Case No. 100 came to trial on November 19. The plaintiff offered to settle and the defendant physician was rather inclined to make a settlement, as he feared the jury might find against him. Physicians who were not personally interested in the case, and who were therefore able to see more clearly, advised his standing trial. After the plaintiff's side was heard a compulsory nonsuit was asked for and granted, as the plaintiff had failed to show that the non-union and deformity of his fractured tibia and fibula were the fault of the doctor's treatment.

Merger of Medical Schools.—It is believed that the long talked of merger of the Philadelphia Polyclinic and College for Graduates in Medicine with the medical department of the University of Pennsylvania will be accomplished this winter. Rumor has it that the Polyclinic will become part of the Graduate School of Medicine of the University, which was created when the Medico-Chirurgical College was absorbed by the University two years ago. Philadelphia seems to be taking steps to rival the combinations of medical colleges now occurring in other metropolitan centers. Baltimore, Chicago and St. Louis have recently followed that policy of lessening expense of separate schools and at the same time providing bigger and stronger educational plants.

PROTECTING THE PRACTICE OF PHYSICIANS IN THE SERVICE.—The Bradford County Medical Society on November 13 adopted the following:

WHEREAS, The demands of patriotism and nationalism require that certain physicians of Bradford County shall give up their home work and devote their time and service to the government, thereby losing not only their temporary income, but a large part of their established practice should they resume such practice, therefore be it

Resolved, That the members of the Bradford County Medical Society pledge themselves to attend the patients of any physician who has entered military service and to turn over to him or to his family one third of the fees collected;

Resolved, That each physician be requested before he enters the service of the government to furnish the other physicians in his locality with a list of such individuals and families who usually call on him for professional services;

Resolved, That when the medical officer returns from the war to his private practice his clientele will, so far as the society can bring it about, be returned to him by those who have given it professional service during his absence with the colors;

Resolved, That each member of the society be requested to have plainly displayed in the waiting room of his office the following notice: "Many physicians from Bradford county have gone to the front in the service of our country. If you are a patient of any of these, kindly inform the physician whom you are now about to consult of this fact, as one-third of your fee goes to your regular physician or his family." And be it further

Resolved, That inasmuch as the members of the Bradford County Medical Society will not limit their services as tendered above to the patients of members of the society we request all physicians of the county in a fraternal and patriotic spirit to join with us in an endeavor to protect the practice of those who have rallied to the support of our country in this her time of need, and to make it the easier for them to return to civil practice.

LANCASTER COUNTY PHYSICIANS' AGREEMENT.—1. When a new patient presents himself, the physician staying at home should ask the name of the doctor who last attended him, also if he is the family physician. If this doctor is absent on service, and has left a locum tenens (substitute, deputy or deputies) an attempt should be made to induce the patient to go to the locum tenens.

2. If the last doctor who attended him is on military service, it should be explained to the patient that attendance will willingly be given on behalf of that practitioner and on no other terms.

3. Any attendance on behalf of such patients should be carefully and separately recorded, and a list of such attendances sent the first of each month to the representative of absentee and a duplicate copy to the Secretary of the Defense Committee. Financial settlement should be made at the same time and reported to the Secretary of the Defense Committee. If the representative of the absentee collect any bill, same settlement must be made to the deputy or deputies.

4. An attempt should be made to ascertain the fees charged by the absentee, and a charge not less than this should be made on his behalf, if reasonable under local circumstances.

5. Accounts rendered on behalf of the absentee should mention the absentee's name, and moneys received should be divided according to the scheme adopted by the local Medical Defense Committee.

6. The rule of dividing the fees of the Eye, Ear, Nose and Throat men should apply to all kinds of work on a 50:50 basis of net profits.

7. In cases in which the patient's frequent change of physician leads to doubt as to who should be regarded as the regular attendant, the absentee should be given the benefit of the doubt.

8. No patient attended on behalf of an absentee should be attended by the deputy for at least one year after the absentee's return.

9. The greatest discretion should be used as to the introduction of a partner or assistant, or in commencing a new practice in an area from which men are absent on service.

10. Physicians newly located in a given district should be doubly scrupulous in regard to the practices of absentees, and should at once ascertain and join in any arrangements that have been made for the protection of absent practitioners.

11. The honor of the profession is involved when a vacancy occurs through the death of a practitioner while in service. If such a case arises, the payment of proportion agreed on of fees, either locum tenens, deputy or deputies, back accounts or future must be rendered to representative as long as war lasts.

12. In all cases of doubt as to what is the right course of action as regards an absentee, the practitioner should consider what he would like his neighbor to do if he were absent on military service. The local Medical Defense Committee are always ready to advise.

13. (*a*) Town, village and office practice. An equal division of the proceeds between the absentee and his deputy or deputies. Division 50:50. Limits to be decided by an acute boundary line and submitted to committee. (*b*) Country practices where traveling expenses are important: three-eighths to absentee, five-eighths to the deputy.

14. The local Medical Defense Committee is hereby vested with the power and authority to deal with and decide any disputes which may arise between any absentee and his locum tenens, deputy or deputies, except in cases of negligence provided for in Section 15. Such decision shall be binding in all respects, and shall be final and conclusive. Said committee is further empowered to remove and appoint another deputy or appoint an additional deputy, as may be exigent or expedient.

15. It is further mutually agreed on between the undersigned parties to this agreement that the absentee shall be indemnified and kept harmless from any and all claims, suits or demands arising from any acts of negligence committed by the deputy or deputies. It is expressly understood and agreed on in case of liability for such negligence that the deputy or deputies, so negligent, shall be primarily liable and pay for same. The liability, if any, is not to be passed on by said Medical Defense Committee, but is to be determined and fixed by due legal proceedings.

We, the undersigned parties to this agreement, of the County of Lancaster, and State of Pennsylvania, for a valuable consideration, and the further consideration of each and every one of us hereby surrendering our legal right or rights as herein set forth, and each one in reliance on the signature of the other, having been induced to sign this agreement by such signature and by the mutual promises contained in this agreement, hereby subscribe our names this.......... day of................, A. D. 1917.

GENERAL NEWS ITEMS

Dr. Alexander R. Craig, Chicago, has been commissioned a captain in the Medical Officers Reserve Corps.

Drafted Pharmacists are to be transferred to the medical department, according to a recent request of the Surgeon-General.

Red Cross Takes Over Dr. Blake's Hospital.—Dr. Blake's hospital in Paris will be known hereafter as American Red Cross Military Hospital No. 2.

Pneumonia in Early Infancy is the title of an interesting paper by Dr. Henry Koplik, given on pages 1661-1666, *Journal of the American Medical Association*, November 17.

A Medical and Surgical History of American Participation in the European War, in five volumes, is to be written by a board appointed by Surg.-Gen. William C. Gorgas.

Dr. Katherine B. Davis, New York, has been appointed by Mayor Mitchel chairman of the parole board. The term of office is ten years and the salary is $7,500 per year.

The Control of Venereal Diseases in the Army, and Sanitation and Sepsis in the Army are interesting reports to be found on pages 1536-1541, *Journal of the American Medical Association*, November 3.

War Camp Recreation Fund.—Mrs. Wesley Merritt has given $10,000 in memory of her husband, one of the "boy generals" of the Civil War, for the maintenance of a club house for enlisted men outside the camp in Bergen County, N. J.

The American Academy of Ophthalmology and Oto-Laryngology held its nineteenth annual meeting in Pittsburgh, October 29 and 30. Major Allen Greenwood, Boston, was elected president and Dr. Lee Masten Francis, Buffalo, secretary.

Measles and Pneumonia in Camps.—Reports of health conditions in the various camps during November showed that measles and pneumonia were predominating. The ratio for the National Guards is higher than for the National Army.

U. S. Doctors and Nurses for Rumania.—One hundred army surgeons and several nurses under Col. Walter D. McCaw, Regular Army, have been ordered to Rumanian hospitals. This is the first organization to be assigned to any foreign service except French and British.

Chemical Industries.—When the war began the capitalization of the chemical industries and those industries with which the chemical manufacturers are closely allied and classified, amounted to more than $3,000,000,000 in the United States. Massachusetts is said to lead in the number of these establishments.

The Memorial Hospital at Richmond, the teaching hospital of the Medical College of Virginia, is to have two new buildings. The citizens of Richmond have subscribed $225,000 for the erection of a hospital for colored patients, and Major James H. Dooley has given $40,000 to build a hospital for contagious diseases.

Medical Corps in France.—It was announced on November 8 that there were 3,180 medical officers, nurses and members of ambulance sections of the Army attached to the British and French armies in France. This American personnel is lent to the British and French forces and is subject to recall and reassignment with American troops. When such reassignment is made fresh units now in training will be assigned to the British and French troops.

Death of Sir William Osler's Only Son.—Edward Revere Osler, who was in the Royal Field Artillery service in Belgium, was on August 29 wounded in the chest and abdomen by a shell. He was taken to the Casualty Clearing Station, at which Drs. George Brewer and William Darracks of New York were in charge. Drs. George W. Crile, Cleveland, and Harvey Cushing, Boston, were also present and assisted in the operation and care, but he died twenty hours later.

Health Insurance in England.—An article in the *British Medical Journal*, in speaking of the article by Dr. Frederick L. Hoffman on "Facts and Fallacies of Compulsory Health Insurance," says: "His statement that insurance in England is a failure is certainly open to dispute. Even if it were admitted that the results have not reached expectations, it might still be argued that any such comparative failure arose from the insurance not going far enough, or from details in administration which experience will correct, and not from any defect necessarily inherent in compulsory health insurance."

Reports of Births.—For failure to report the birth of a child, a St. Louis doctor who had knowledge of the birth was arrested and fined $5, the midwife who delivered the child was fined $10. The baby is blind. After birth the baby developed inflamed eyes which the midwife treated for nine days and then called the physician, who was unable to save the eyes, and failed to report the birth. Commenting on this neglect, the St. Louis *Post Dispatch* remarks editorially: "In the light of these facts, we venture the opinion that St. Louis should make an effort to keep as perfect a record of new babies as it does of new corpses."

Health of American Soldiers in France.—Health conditions among the American soldiers in France are shown in a table prepared at Surgeon-General Gorgas' office, based on reports for the week ending November 9. Following is the estimate of the percentage of cases of principal diseases per thousand men per year: Pneumonia, 16.6; dysentery, 2; malaria, 1; venereal disease, 181.5; typhoid, none; paratyphoid, none; measles, 21.7; meningitis, 1; scarlet fever, 1.9. The noneffective rate per thousand for November 12—which is the number of men per thousand who, on the day reported, were excused from duty for any indisposition whatever—was 31.6. Total deaths for the week ending November 9 was 8, as follows: Pneumonia, 3; heart disease, 1; wounds received in action, 3; from accidental gunshot wounds, 1.

Announcement to Physicians, Public Health and Social Workers.—The Metropolitan Life Insurance Company invites physicians, public health and social workers to make use of its valuable collection of mortality statistics. These statistics present the principal causes of death among white and colored wage-earners in the United States and Canada. The material covers over ten million individuals for each of the six years, 1911 to 1916. Death rates are available for each race, by sex and by age period. The company hopes in this way to aid in the study of disease and disability among wage-earners. It desires to stimulate medical investigation and research. By offering these statistics to the medical profession and to public health and social workers, the company expresses also its appreciation of the cooperation which it has received from physicians and others who have replied to inquiries and have given detailed information in thousands of cases. This assistance has helped to make the statistics more accurate and valuable. All inquiries should be addressed to Statistical Bureau, Metropolitan Life Insurance Company, 1 Madison Avenue, New York.

United States Food Leaflets.—A new series of publications on food, the United States Food Leaflets, is being issued jointly by the United States Department of Agriculture and the United States Food Administration. The kind of material needed was discussed at a conference of home economics workers in August, 1917, and the plan of the series developed from that discussion. The series is designed to meet the need of extension workers, and of the women's clubs and similar activities, and so to be of service both to the untrained housekeeper in city or country and to the woman who has had more time for the study of food problems. The leaflets are brief, in general, not over four pages, somewhat posterlike in form, and written in simple, nontechnical language. Nevertheless, the primary object is not to limit the discussion to simple problems, but rather to make the discussion of all the problems simple.

Keep the Farmer Well.—It has been stated that the supreme need of the nation during the coming months is an abundance of foodstuffs. The truth of this statement is being more and more brought home to every citizen as the days go by, the constantly increasing prices of food materials constituting reliable evidence that the situation is becoming acute. One reason for this is the scarcity of labor in our rich agricultural sections, a condition which cannot be altogether relieved. Another reason, and one which is frequently overlooked, is the lack of efficiency in the present day worker, particularly when due to disease. "Keep the farmer well" should be a fitting slogan of the present day. There never was a time when production was in such need of stimulation, when able-bodied men and women were in such demand. Every case of malaria, typhoid fever or other efficiency reducing disease among the productive population means that the output of food is appreciably reduced and that the shortage is measurably increased.

Trade Commission Acts on Salvarsan Patent.—The Federal Trade Commission on November 27 entered orders for licenses to three firms to manufacture and sell the product heretofore known under the trade names of "Salvarsan," "606," "Arsenobenzol," "Arsaminol," patent rights which have been held by German subjects. Hereafter this important drug will be manufactured and sold under the name of "Arsphenamine." The Public Health Service has prepared rules and standards for the manufacture and testing of "Arsphenamine" and will supervise its manufacture, authority having been conferred on the Public Health Service by the Secretary of the Treasury, and the observance of the rules and standards become a condition of the license. The three firms which will be hereby permitted to manufacture and sell "Arsphenamine" are Dermatological Research Laboratories of Philadelphia; Takamine Laboratory, Inc., New York, and Farbwerke-Hoechst Company (Herman A. Metz Laboratory) of New York. While the price of the product is not fixed at this time by the commission, the right to fix prices is retained, and a price of $1 per dose to the Army and Navy, $1.25 per dose for hospitals, and $1.50 per dose for physicians, are the prices at which some, at least, of the licensees have stated that they intend to offer the licensed drug.

Universal Military Training.—Resolution adopted unanimously by the Clinical Congress of Surgeons of North America at Chicago, Oct. 25, 1917:

Whereas, The experiences of the nation convince us of the necessity for universal military training, to furnish qualified men for defense, to strengthen manhood and mental poise, and to make for a more efficient citizenship, and

Whereas, We believe it will democratize youth and furnish discipline, while developing physical force and endurance, and will produce better fathers and workers for the ranks of peace; therefore be it

Resolved, That the Clinical Congress of Surgeons at its eighth annual session urges on Congress at its coming session the passage of a measure along the general lines of the Chamberlain Bill for Universal Military Training, and that the cantonments now used by the National Army be utilized, if possible, for such work.

Resolutions adopted unanimously by the State Committees of the Medical Section, Council of National Defense, at a meeting of committees from all states (except Maine and Delaware), held in the Congress Hotel, Chicago, Oct. 23, 1917:

Whereas, The experience through which the United States is now passing should convince every thoughtful person of the necessity for the universal training of young men, not only for the national defense in case of need, but also to develop the nation's greatest asset—its young manhood—in physical strength, in mental alertness, and in respect for the obligations of citizenship essential in a democracy; therefore be it

Resolved, By the State Committees of the Medical Section of the Council of National Defense that they strongly urge the adoption by our government at this time of a comprehensive plan of intensive universal military training of young men for a period of at least six months, on arriving at the age of 19 years; and that this body also support the movement to secure the introduction into public schools of adequate physical training and instruction;

Resolved, That the members of each State Committee immediately take active steps to insure public support for the subject of these resolutions through the newspapers, through public meetings and through the appointment of committees in each county; also that copies of these resolutions be forwarded to the Senators and Members of Congress in their respective states, with a personal request that favorable action be taken at the coming session of Congress on a measure following the principle of the Chamberlain Bill and to become operative as soon as the Army cantonments are no longer required for the training of the forces in the present war;

Resolved, That each State Committee from time to time report to the Medical Section of the Council of National Defense as to action taken and progress secured in their several states.

Camp Welfare Work by Fraternal Societies Accepted Conditionally by War Department.—The Secretary of War has made the following announcement: The various fraternal organizations of the country having from time to time offered cooperation to the War Department in the matter of the training-camp activities and welfare work in communities adjacent to military camps, a conference was called by the Secretary of War at his office on Monday, October 29, at 3 p. m., attended by the following representatives of such societies: L. E. Sisler, supreme record keeper, the Maccabees, 1021 Woodward Avenue, Detroit, Mich.; William S. Parks, grand commander, Knights Templar, the Farragut, 900 Seventeenth Street, Washington, D. C.; Col. P. H. Callahan, chairman, Knights of Columbus committee on war activities, 730 Woodward Building, Washington, D. C., phone Maine 9832; W. W. Mansfield, past grand counselor, United Commercial Travelers of America, 719 Seventh Street N.W., Washington, D. C.; E. St. Clair Thompson, 306 Mutual Fire Insurance Building, Washington, D. C., representing Edward W. Wellington, general grand master, Royal and Select Masters of the United States of America, Ellsworth, Kan.; Barton Smith, sovereign grand commander, Supreme Council Ancient and Accepted Scottish Rite, Toledo, Ohio; Edward S. Schmid, grand monarch, Supreme Council, Mystic Order Veiled Prophets of the Enchanted Realm, 712 Twelfth Street N.W., Washington, D. C.; Adolph Kraus, president, B'nai B'rith, Tribune Building, Chicago; Max L. Hollander, grand secretary of the Independent Order B'rith Abraham; Frank C. Goudy, grand sire, Independent Order of Odd Fellows, Box 28, Denver; Solomon Schelinsky, grand master I. O. B. A., 37 East Seventh Street, New York; Dr. J. G. Pace, representing Modern Woodmen of America, Lincoln, Neb., Hotel Raleigh, Washington, D. C.; C. E. Ovenshire, 620 Bryant Avenue North, Minneapolis, as imperial potentate, A. A. O. N. M. S.; George F. Moore, sovereign grand commander, Supreme Council Scottish Rite Freemasonry, Southern Jurisdiction, U. S. A.; Joseph McLaughlin, Ancient Order of Hibernians, Philadelphia; Louis L. Gottlieb, 945 Pennsylvania Avenue N.W., Washington, D. C., representing Hebrew Sheltering and Immigrant Aid Society of America; Morris Sheppard, sovereign banker, A. O. U., representing Woodmen of the World, of Omaha; John W. Ford, supreme dictator Loyal Order of Moose, 421 Commercial Trust Building, Philadelphia; James A. Flaherty, 1328 Chestnut Street, Philadelphia, K. of C.; George E. Corson, general grand high priest, representing the General Grand Chapter of Royal Arch Masons of the United States; Joseph A. Burkart, 1410 H Street N.W., Washington, D. C., representing Fred Harper, grand exalted ruler, B. P. O. E.; John J. Brown, Vandalia, Ill., representing the order of the Knights of Pythias of America, supreme chancellor of United States and Canada; E. W. Bradford, local representative of grand sire, Independent Order of Odd Fellows, Loan and Trust Building, Washington, D. C.

The conference was opened by the Secretary of War, who stated his appreciation of the cooperation offered and the desire of the War Department to make the expenditures and efforts which the societies are willing to undertake as effective as possible to this end. He pointed out that the soldiers while in camp are for the most part occupied and under disciplinary organization, and that their greatest need for recreation and diversion comes when they are on leave and are visiting near-by towns. He therefore recommended that the representatives of the various societies present confer with regard to a program which would coordinate their efforts and bring them into complete harmony with the activities already in progress by means of other agencies. This morning the conference reassembled and a resolution which had been passed by representatives of the societies was presented to the Secretary as expressive of the unanimous judgment of all those in attendance.

The Secretary then stated that he would direct the commanders at the various training camps to authorize, as far as available land exists in the several camps, the construction of any fellowship or social building which any of the fraternal organizations, acting either individually or collectively, may desire to construct; to place at the disposal of such organizations any available facilities for social and fellowship meetings at such times and under such circumstances as are found to be consistent with the training wholly necessary to be carried on in the camps; to recognize accredited representatives of these societies authorized to visit the camps and present to the men the social opportunities arranged for their benefit and entertainment in the near-by communities.

It was agreed on all sides that the order to be issued by the Secretary would contain the explicit provision that no initiation or secret meetings of any kind were to be carried on by any society within the limits of the camp, and that the recognition to be extended to such societies would be limited to those of a well-recognized and already organized character having men in the several camps, and did not authorize the organization of new societies or the carrying on of propaganda work by them.

BULLETIN EXCERPTS

THE BULLETIN, BERKS

New Mental Clinics

In the October *Bulletin,* mention was made of a new clinic to be established for the study and disposition of the feeble-minded and mentally perverted members of our community. The first was held November 6, at the Dispensary, Administration Building, Eighth and Washington Streets, by Dr. L. A. Wheeler, a member of our society and assistant to Dr. S. S. Hill, superintendent of the State Asylum, South Mountain. This clinic was a success. We have long felt the need of a movement in this direction, and so long as material is at hand these clinics will continue once a month. These are free, and although the movement itself has been given as much publicity as possible, the cases themselves will be studied privately and held in strict confidence.

Important Business at October Meeting

A resolution was passed by the society that a suitable tablet be secured by the trustees of the society, on which shall be inscribed the name, rank and the command of those members of the Berks County Medical Society who have volunteered in the medical section of the Reserve Army Corps. A resolution was passed remitting the annual dues for 1918 of those members in the Army and Navy. These members in the actual service of this country or her Allies shall be entitled to all the privileges of the Society, including the Journal, the Medical Defense Fund, the Medical Benevolence Fund, etc. Ex-Mayor

Ira Stratton, president of the Berks County Chapter of the National Red Cross Society, addressed the members. He asked that the Red Cross Society have the privilege of asking for free medical service for the families of enlisted men, who, after investigation, show that they are unable to pay for said service. The society passed a resolution, that the secretary furnish the Chapter a list of members of the Berks County Medical Society and that they be called on in alphabetical order.

WEEKLY ROSTER, PHILADELPHIA

Report of the Board of Directors

Your Board of Directors have held their regular stated meetings as provided for by the Constitution and By-Laws of the Association. The attendance of its members has been uniformly good. The business of the Association falling under its functions has been transacted in an orderly manner and is duly set forth in the minutes of its meetings. The Standing Committees of the Board have performed their duties with fidelity and efficiency, as set forth in their respective reports herewith included. The Treasurer, it will be observed, reports that your invested fund has reached the sum of $50,000. The Finance Committee report, as their latest purchase, $1,600 of the present issue of 4 per cent. Government Bonds, which they were pleased to do, not only as a trustworthy investment, but as a gratifying expression by the Association of a patriotic impulse. The Committee on Benevolence have been active and have been able to extend the benevolent purpose of the Association to an unusual degree.

Respectfully submitted,
Samuel D. Risley, M.D.,
Chairman of the Board of Directors.

Oct. 13, 1917.

CALL AND ROSTER, FRANKLIN

Annual Dues

We regret in a way to write this, but some members overlooked this matter in the present year until quite late and when the May Number of the *State Medical Journal,* with the Roster of officers and members came out and their names were not in the list it was a disappointment to those members as it was also disappointing to the officers of our Society. Later of course they paid, but it could just as well have been done early. There remains but two months yet before the new year begins. It is certainly safe as well as comforting to pay even before the year begins as some do. But at least pay by the New Year Day, January 1.

Your Bit

Doctor, if you are a stay-at-home member and do not attend the meetings because you conclude that the Society and its meetings are not up to what they ought to be, aren't you perhaps partly to blame for it, if such is the case? The Society undoubtedly needs bright critical minds to help make it worth while. So come to each meeting, doctor, and help boost the work. Do not ignore this little note but study it carefully, then act by deciding to attend. The Society meetings will surely be better by your presence and you will be benefited. Try this.

COMMUNICATIONS

INSURANCE FAKER WANTED

Philadelphia, Nov. 22, 1917.

To the Editor:—There is a man operating throughout the state of Pennsylvania among the medical profession, representing himself to be a representative of the Commonwealth Casualty Company of Philadelphia, securing money under false pretenses.

This man signs himself as W. H. Thompson, R. O. Williams, Herbert Freeman, Hobart Freeman, and no doubt many other aliases. He is about 35 years of age, about 5 feet 11 inches in height, weighs 150 to 160 pounds, has florid complexion, dark hair, obscure mustache and when last seen had on a dark overcoat and suit of brown clothes. He is a smooth talker, seems to understand thoroughly the insurance business, and when we last heard of his actions he was operating in York.

His plan of campaign is as follows: When arriving in a city or town he makes inquiry as to some doctor who has gone to war. Then he picks out his victim, tells him such and such a doctor has gone to war, which necessitates the appointment of a medical examiner. After telling the doctor how much money he would earn in fees, he suggests the thought of the doctor becoming a member, offering him a contract, collecting $10 or more if he can get it, leaving a receipt on an application form stolen from some company's office, and that is the last the doctor hears about his policy or appointment until he becomes suspicious and notifies the company, only to learn that this man is a fraud.

We have received complaints from a number of physicians, located in Altoona, Pittsburgh and vicinity, York, Huntingdon and elsewhere. Our manager for Western Pennsylvania, Mr. J. C. Guy, has spread every net to capture this man without success. We have notified the Insurance Department, but he still continues to operate.

Will you lend us your assistance in notifying through your journal all professional men to beware of this man and, should he put in an appearance, to have him arrested on suspicion at once, and notify our Pittsburgh office, 306 Magee Bldg., J. C. Guy, Manager, who will make every effort to have him identified and bring charges against him. We will appreciate any assistance you may give us in apprehending this menace, not only to physicians but to insurance companies as well.

Very truly yours,
E. W. Cook, General Manager of Agents.

CAN AN INJURED WORKMAN SELECT HIS OWN PHYSICIAN?

Philadelphia, Nov. 22, 1917.

To the Editor:—The following letter was received from the assistant secretary of the Atlantic Refining Company at Philadelphia, in response to my letter regarding a private patient of mine suffering from compound fractures and lacerations of fingers who would not have any one else treat him. Is the attitude of the company correct? You may publish this.

Yours very truly,
John J. Gilbride.

Philadelphia, Nov. 21, 1917.

Dr. John J. Gilbride,
1934 Chestnut Street,
Philadelphia.

Dear Sir:—With reference to your note of November 19, we have to advise that in accordance with our obligations under the Workmen's Compensation Act we suggested that Mr. Swipe should take medical attention at the hands of St. Agnes Hospital. This apparently he has not seen fit to do, thereby relieving us of the responsibility for any medical expense he may incur, since under the law the employer is responsible for the cost of medical attention to injured employees only when they accept such attention as is proffered by the employer.

Yours very truly,
E. J. Henry.

BUREAU OF MEDICAL EDUCATION AND LICENSURE

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THE WAR AND HOSPITAL INTERNSHIP

To the Editor: The loss of interns to hospitals due to the early action of the Provost-Marshal is much more serious than might be supposed. I am enclosing you data in regard to the approved general hospitals in Pennsylvania:

General hospitals approved for internship in Pennsylvania	72
Total number of interns normally required	418
Total number of interns at present	327
Total loss of interns	91
Percentage of loss (nearly)	22

This shows a loss of 22 per cent. Had the President not stepped in and interfered, it can plainly be seen what would have happened.

Very truly yours,
J. M. Baldy.

Philadelphia, Nov. 1, 1917.

BOOKS RECEIVED

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

The Surgical Clinics of Chicago. Vol. 1, Number 5 (October, 1917). Octavo of 214 pages, 84 illustrations. Published bimonthly. Price per year, paper, $10.00; cloth, $14.00. Philadelphia and London: W. B. Saunders Company.

Manual of Laboratory Diagnosis. By Stella M. Gardner, M.D., and Mary C. Lincoln, Ph.B., M.D., Formerly Assistant Professors of Laboratory Diagnosis, College of Medicine, University of Illinois. Chicago Medical Book Company, Chicago, 1917. Price, $1.25.

A Handbook on Antiseptics. By Henry Drysdale Dakin, D.Sc., F.I.C., F.R.S.; and Edward Kellogg Dunham, M.D., Emeritus Professor of Pathology, University and Bellevue Hospital Medical College; Major, Medical Officers Reserve Corps, U. S. Army. New York: The Macmillan Company, 1917. Price, $1.25.

Diseases of Women. By Harry Sturgeon Crossen, M.D., F.A.C.S., Assistant in Gynecology, Washington University Medical School, and Associate Gynecologist to the Barnes Hospital; Gynecologist to St. Luke's Hospital, Missouri Baptist Sanitarium and St. Louis Mullanphy Hospital; Fellow of the American Gynecological Society and of the American Association of Obstetricians and Gynecologists. Fourth edition, revised and enlarged. With 800 engravings. St. Louis: C. V. Mosby Company, 1917. Price, $7.50.

BOOK REVIEWS

THE PHYSICIAN'S VISITING LIST FOR 1918. Sixty-seventh year of its publication. Philadelphia: P. Blakiston's Son and Company, 1912 Walnut Street. Price, $1.25 for 25 patients weekly; $1.50 for 50 patients.

This book is bound in leather, contains a dose list prepared in accordance with the U. S. Pharmacopeia, notes on asphyxia and apnea, tables for calculating the period of gestation, etc. L. F. P.

PROBLEMS OF SUBNORMALITY. By J. E. Wallace Wallin, Ph.D., Director of Psycho-Educational Clinic, Board of Education, St. Louis. With an introduction by John W. Withers, Ph.D., Superintendent of Public Schools, St. Louis. xviii + 485 pages. Yonkers-on-Hudson, N. Y.: World Book Company, 1917. Cloth, $3.00.

This book by Dr. Wallin, who has spent almost eight years in a continuous clinical study of defective children in institutions for feebleminded, epileptic and insane, and in university and public school clinics; who has had practical experience in the organization of public school classes for feebleminded, backward, and other types of defective children; and who has offered courses on subnormal children and clinical psychology in a number of institutions, will be welcomed by superintendents of public schools and institutions for the feebleminded, epileptic, insane, delinquent and criminal; by teachers in special classes, psychologists, educationists, sociologists, child welfare workers and physicians. The writer has worked out a consistent plan of organizing the different types of special classes for different types of subnormal children. The larger educational, social, preventive, eugenic and state problems involved in the treatment of the feebleminded and epileptic are discussed. The book contains the reports of the St. Louis committee on special schools and the committee on defective children of the Missouri Children's Code Commission.

While feeble-mindedness is often found complicated with a criminal life, feeble-mindedness of itself has no necessary connection with criminality. The fefective child is driven into criminality by unwise treatment at the hands of people who do not understandhim.—Henry H. Goddard in *The Child,* June, 1917.

SOCIETIES

PHILADELPHIA LARYNGOLOGICAL SOCIETY

Meeting held at Cadwalader Hall, College of Physicians Building, Oct. 2, 1917, the subject for the evening being Clinical Experiences with Hay Fever.

Etiology and Specific Treatment of Hay Fever. Dr. A. Parker Hitchens emphasized the importance of a diagnosis obtained by (1) a thorough rhinoscopic examination to exclude any abnormality; (2) a specific diagnosis on the season of the year, spring and summer producing the pollens of common grasses, fall producing the pollen of ragweed (the author suggested a button, containing a coverglass coated with a glycerin mixture, by which means the particular pollen inhaled might be identified); (3) skin tests, made similar to vaccinia, using a tablet triturate of pollen, at the end of an hour and again in twenty-four hours, the reaction being noted as is also the pollen used. Negative tests may show an immediate area of redness but which does not increase. For prophylaxis an initial dose of extract containing 0.0025 mg. nitrogen may be given two or three months before the season; subsequent injections with five to seven day intervals. Prophylactic injections are not successful in every case. For treatment in season, individual consideration is necessary, as the period of relief varies. A few persons are relieved for tweny-four hours only, and in these cases daily doses are necessary. The normal period of relief is five days.

Dr. Hitchens went into the history of hay fever with a view of determining the exciting causes. Many causes have been mentioned, e. g., external irritant dust, plant emanations, various odors, atmospheric conditions, solar heat, constitutional defects of hay fever patients, nervous diathesis. Dr. Hitchens enumerated the uric acid theory of 1868; the bacterial theory of 1869; the pollen theory of Blackley followed by the nasal theory (nasal disease); three-factor theory, a combination of the existing opinions, requiring three elements, viz., constitutional defect, pathological condition, and external irritant. The last mentioned theory has persisted to the present day.

The work of Dunbar in 1903 was reviewed, his experimental work, corroborating the work of Blackley; his work on the chemistry of the pollen determining the exciting cause or special substance causing the symptoms of hay fever. The special substance found was an albuminous body or toxalbumin. This latter substance Dunbar was able to demonstrate as being thermostable, acid stable; enzymes such as pepsin and trypsin are unable to destroy it; lastly, it is precipitated by complete saturation with ammonium sulphate. The toxin-antitoxin theory of Dunbar was soon attacked from the anaphylaxis standpoint and it is now agreed that the symptoms of hay fever are merely a manifestation of hypersusceptibility of the tissues to the albumin of certain pollens. Treatment by pollen vaccine has given further evidence in favor of the anaphylactic nature of hay fever. Dr. Hitchens went into detail in the preparation of the vaccine. He claims that 88 per cent. of patients treated have reported entirely free from symptoms or are markedly benefited.

Dr. Hitchens gave the following conclusions: (1) Hay fever is due to a protein constituent of the pollen of plants. (2) The hay fever attack is a manifestation of hypersusceptibility to this protein and the disease is to be classed among the anaphylactic phenomena. (3) By means of very simple skin tests the exact varieties of pollen to which an individual is hypersusceptible may be determined. (4) It is a well-known fact that hypersusceptible animals may be desensitized by the use of minute doses of the protein to which they are susceptible. (5) In like manner hay fever patients may be desensitized to the pollens to which they are hypersusceptible by the subcutaneous injection of extracts from these pollens. (6) By the repeated injection of proper pollen extracts before the season a certain percentage of patients may be immunized to hay fever. (7) At least 80 per cent. of the patients receiving pollen vaccines may expect considerable relief or entire freedom from symptoms throughout their season.

In discussion, Dr. George W. Mackenzie was unwilling to commit himself to any one form of treatment in hay fever. In the last three or four years he has been using or injecting a filtrate of the patient's nasal secretions. He claims to obtain positive results in 90 per cent. of his cases. If a pollen is present on the nasal mucous membrane, he claims that it will be present in the secretion collected for the filtrate.

Dr. Otis Stickney uses an electrocautery to desensitize the membrane. He thinks that the general condition of the patient, particularly the gastro-intestinal tract, should be looked after.

Dr. F. O. Lewis with the use of vaccine gets relief in 75 per cent. of cases, none absolutely. Some relief is obtained with bacterial vaccines. He advocates surgical interference where necessary. In 15 per cent. he obtains no relief whatever with the use of vaccine.

Dr. E. J. Stein of Lancaster, in citing fifteen cases in seven years, reported having obtained improvement in eight cases and slight improvement in seven. In the present year he has obtained five clinical cures and one failure.

Dr. Stauffer wished to have an explanation of dog emanations.

Dr. Gile emphasized the importance of diagnosing the cases of hay fever, stating that some cases of rhinorrhea are often mistaken for hay fever. Some cases are due to polypi; therefore a thorough rhinologic examination is necessary.

Meeting of November 6, in Cadwalader Hall, College of Physicians, at which was presented a symposium on the Larynx.

Anatomy. Dr. Robert F. Ridpath emphasized the following points: The larynx should be considered the root of a tree, the bronchi and their branches, the branches of the tree. In this manner the study of this portion of the respiratory organs becomes simplified. Secondly, the incompleteness of the tracheal cartilages permit the rings to come together in the act of respiration. The cricoid (signet) ring being the only complete ring of cartilage of the larynx. Concerning the thyroid cartilage, up to the age of puberty it remains practically the same size. It acts as a shield to the vocal bands. Particular emphasis was laid on the motion of the arytenoids in their articulation with the cricoid. The motion as carried out by these cartilages is threefold, namely, downward, forward and inward, resulting in the approximation of the vocal bands. The reverse motion produces relaxation or the opening of the vocal bands. This latter motion of upward, backward and outward is produced by the posterior cricoarytenoid. The epiglottis and glottic region were clearly described. Emphasis was laid on the difference in production of tone and pitch of the voice; the latter being produced by the tightening of the thyrocricoid ligament simulating the tightening of the strings of the violin. Tone is dependent on the individual anatomy and is aided by other methods. The speaker concluded with the description of the sinus pyriformis and the aryepiglottic folds. It is these latter folds and not the epiglottis that overlap or cover the orifice to protect the larynx from foreign bodies.

Physiology. Dr. Herman B. Cohen emphasized the knowledge of the cartilage articulations in order to understand the workings of the larynx, the two main articulations being the crico-arytenoid and the cricothyroid. It is the cricoid and not the thyroid that is the movable cartilage. The sole opener of the larynx is the posterior crico-arytenoid, and the closers of the larynx are the lateral crico-arytenoid, the thyroarytenoid, the vocales and the single muscle, the transverse arytenoid, the tensors of the cords being the two cricothyroids, which bring the cricoid to the thyroid. In discussing the muscles of phonation in comparison to the muscles of respiration with particular reference to the importance of these two groups of muscles, the former was conceded as being subordinate to the latter. The fact was brought out that it was the posterior crico-arytenoid that was so commonly affected in unilateral paralysis of the larynx. The large source of nerve supply with special reference to the recurrent laryngeal nerve was then given in detail. The epiglottis, as was mentioned earlier, is not essential for the protection of the laryngeal orifice from foreign bodies, but does assist in the modification of the voice.

Pathology. Dr. Nathan P. Stauffer mentioned as the most common diseases in the order of frequency the following: Tuberculosis; diphtheria; papilloma; carcinoma; edema; foreign body; lues; typhoid or posttyphoid paralysis. Describing each in detail, he emphasized the ulceration of tuberculosis as conglomerate. He warned the physicians that where there was sudden hoarseness in typhoid fever to be prepared with a tracheotomy set. Dr. Stauffer concluded with quoting a few cases as presenting possible effects of infantile paralysis.

Presentation of Cases. Dr. Fielding O. Lewis presented a case of laryngostomy on a young man for stenosis following the swallowing of Sloan's liniment, and another case of laryngostomy performed on a boy, 19 years of age, the boy having received a severe injury by falling on a stage and striking his larynx. The patient had a web across the cords with a small opening in the web. A third patient, luetic, 32 years of age, with stenosis of the larynx was presented. He had had a tracheotomy performed.

Dr. Edgar J. Stein presented a patient who had had a total laryngectomy for dyspnea, aphonia and pain due to carcinoma. Preliminary tracheotomy was performed. This operation was performed five years, ago, and at the present time the patient is comfortable and is able to take care of himself.

Dr. Robert F. Ridpath presented a man complaining of hoarseness due to papilloma of a vocal cord, its attachment being by a pedicle, causing the small tumor to disappear and hide beneath the cord.

Dr. A. H. C. Rowand read a report of a case of acute emphysematous swelling on the anterior aspect of the larynx. Patient, female, aged 32, had a sudden coughing spell with temporary closure of the glottis, followed immediately by complete relief. A few days later she complained of a lump in the throat and a constant tickling and desire to cough. Examination revealed a round swelling on the anterior aspect of the thyroid cartilage near the cricoid articulation. Pressure caused severe coughing and discomfort, and slight crepitus was elicited. During the next six or seven weeks the patient used iodin ointment and gentle massage. About two months later the condition disappeared as suddenly as it came on. There has been no recurrence. Dr. Rowand diagnosed the case as emphysematous cyst based on the following facts:
pearance and its having come on during a coughing
Slight crepitus, transient duration, its sudden disap-
spell.

Herman B. Cohen, Reporter.

WILLS HOSPITAL OPHTHALMIC SOCIETY

Meeting, Nov. 5, 1917

Dr. McCluney Radcliffe, Chairman .

Dr. P. N. K. Schwenk exhibited a case of congenital cataracts, in a baby boy, in which he removed the lens from each eye. One eye was operated on at the age of 11 months and the other at the age of 14 months. Attempts at discission failed owing to extreme toughness of lens capsule. He therefore opened the anterior chamber by means of a keratome, grasped the anterior capsule with iris forceps, and delivered the lens in its capsule. Recovery was prompt. Two months later the left eye was treated in a similar manner, but the capsule tore and some cortex remained in the anterior chamber. The recovery was uneventful. Before the operation there was a divergent squint O.S., but at the age of 16 months he ordered a + 8.00 D. lens for each eye and, when worn, the visual axes are parallel. This is the youngest child he has ever glassed.

At the present time the left eye shows an occluded pupil and a bowed iris due to an accident after leaving the hospital.

Discussion by Dr. William Zentmayer: While this particular case, exhibited by Dr. Schwenk, admits of no other operative procedure than that employed, the left eye illustrates what may, and often does follow the operation of linear extraction of juvenile cataract. Here the result was good in one eye, but in the other eye the adhesion of the iris to the wound was extensive and has produced an inflammation which has rendered the eye visually useless. There is no question of the far greater safety of repeated discission.

In reply to a question of Dr. Kleinhans, Dr. Zentmayer said that he thought the operation should be done early, about the second year.

Dr. Zentmayer exhibited, from the service of Dr. Chance, a woman 60 years old, who had recently noticed a bulging of right eye preceded by nose-bleed. There was a firm ridge-like mass palpable just within the inferior orbital margin. There seemed to be slight bulging of internal process of frontal bone on same side. Movements of the globe were somewhat restricted downward and outward. The fundus could not be examined because of immature cataract which also prevented testing the visual acuity. The patient had just been admitted and was shown for diagnosis. Probably a case of malignant growth in antrum.

Dr. Zentmayer showed, from the service of Dr. Chance, a girl with symmetrical lenticular opacities in anterior and posterior cortex and limited to one-eighth circumference of perinuclear zone. They were probably of the annular type.

Dr. William Campbell Posey presented a case of bilateral coloboma of lower lids. The notch in the right eyelid occurred at junction of middle and outer third, in the left eyelid at junction of middle and inner third. Both superior maxillary bones showed faulty development, in consequence of which the right side of the mouth was drawn markedly upward. The inner halves of both upper lids exhibited colobomatous tendencies, the lid margins in this position being drawn upward in a sweeping curve with its convexity downward. Dr. Posey had corrected the fissure in the right eyelid by a plastic operation. His colleague, Dr. John B. Roberts of Polyclinic Hospital had corrected the deformity at angle of mouth. The coloboma in the left eyelid, which was complicated by symblepharon and marked retraction of the tissues of that region, had resisted correction at the first operation. Dr. Posey said he had another in mind which aimed at correction of the deformity by transplantation of a flap of skin from the root of the nose into the colobomatous area.

Dr. Paul J. Pontius presented a case of a boy 15 years old, who was struck with a shot from an air-rifle. This shot hit the sclera of right eye about 10 mm. to outer side of cornea. The accident occurred ten days ago. Patient was first seen twenty-two hours later. At this examination nothing was seen but the external injury to sclera which showed as a circular area of hemorrhage 2 mm. in diameter. Eight days later, bulging occurred over this area. Today the fundus shows a patch of choroiditis beneath the site of scleral wound. The surrounding choroid shows some deep effusion and is slightly elevated. There is, however, no retinal detachment. The disk shows minor early optic neuritic changes.

HAROLD W. HOW, Secretary.

PATRIOTIC RALLY AND RECEPTION UNDER THE AUSPICES OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA, THE PHILADELPHIA ACADEMY OF SURGERY, THE MEDICAL CLUB OF PHILADELPHIA, AND THE PHILADELPHIA COUNTY MEDICAL SOCIETY.

Held at the Bellevue-Stratford Hotel, November 7, 8 p. m.

MAJOR JOHN B. DEAVER, presiding, and present as Guest of Honor: SIR BERKELEY MOYNIHAN, COL. T. H. GOODWIN, MAJOR GEORGE W. CRILE, and MAJOR FRANKLIN H. MARTIN.

COL. T. H. GOODWIN: When I came to your country some months ago the principal instructions which I was given were that I was to tell you of the mistakes which we had made in Great Britain, the many and serious mistakes, in order that you might avoid similar pitfalls. One of our most serious errors was failing to realize the probable duration and severity of this war. I remember very well the astonishment and the incredulity with which the British public received Lord Kitchener's statement that the war would last, at least, three years. He did not say, as I frequently see misquoted, that it would be over in three years.

Of course, it is very difficult to arrive at a complete realization of conditions and necessities when you are far removed from the war area; such matters as the necessity for training the medical profession and for training a large reserve of that and other professions. There must be emphasized economy, conservation of fuel, public money, avoidance of any wastage. These may not appear at the beginning to be matters of vital necessity, but it is soon evident that they are to be practiced if distress is to be avoided.

We encountered many trials and difficulties. May I suggest that what we experienced you will experience. An enormous expansion will have to take place in your army and concurrently your medical force also will have to be extended. Your army may increase, probably will, to a million. It is a mistake to assume that a few thousand will suffice; many thousand will be needed. In addition to the personnel of your initial army you must have a large number of reenforcements to replace men tired and ill and to provide against the general wastage of war.

I would earnestly beg you to avoid the cardinal mistake of underestimating the enemy. Do not believe any stories you hear as to the enemy being broken, as to its being at the end of its resources, as to the morale of the German soldier being a thing of the past. The German morale is not broken. The German soldier is a brave, hard fighting, determined man, essentially patriotic, and splendidly disciplined. The German soldier, the German officer and, I assume also, the German nation are full of confidence, at least they were a few months ago. Just before coming out I was talking to a German officer personally of the possibility of America coming into the war. He said, "Of course America is coming into the war. We shall attend to that. We shall take steps to bring her in. We have got to pay our war cost with American money." He said, "You may laugh now, but mark my words, you will see our victorious armies in the United States. We intend to teach them as we have taught other countries, what war means. Wait and see." That was his absolute belief. I have waited, and am still waiting; but it was not with any confident expectation of seeing the German armies walking through this country that I came here.

I do not think that any civilized nation in the world has ever imagined the utter depravity to which modern warfare can bring a nation.

You must pardon me for speaking of the "English speaking soldier" rather than of the "British soldier." In the last six months I have been so closely associated with the men of your army that I regard your officers and men exactly as I do my own officers and men. I would not wish it to be otherwise. When I am thinking of my own men I am thinking of yours. When I am thinking of my own officers I am thinking of yours. Seeing, as I have seen, the enormous amount of suffering, pain, misery, loss, wastage, much of which might have been avoided by more forethought, more realization, more preparation, I would beg you to prepare now, and leave no stone unturned to insure adequate preparation.

May I run over briefly what happens to a man when he is shot at the front line trench. When you are up at the front the atmosphere is not depressing. Sometimes it is a little hard to keep cheerful in spite of the drawbacks, but it is a principle that one has to keep cheery and the general atmosphere is anything but depressed. Supposing that a high explosive shell strike a regiment occupying a front line trench. Much less damage is done than you think. One of the men is struck in the shoulder, you hear a few vitriolic remarks regarding German shells, the man uses his first-aid dressing; one of the officers telephones that a wounded man is being sent to the casualty station. Private Atkins receives a dose of antitetanic serum, his arm is placed in a sling, he is put on a stretcher and sent farther back where there are motor ambulances and then taken probably a couple of miles back to the dressing station. He is there given a hot meal, his wound is attended to very much more carefully than at the first-aid treatment was possible. If he is more seriously wounded than was thought he is sent to the hospital at the base where he is treated for some weeks. He may be sent to England or he may be kept in this large base hospital, perhaps placed in the ambulance corps and later returned to the firing line. One of the cheeriest of the men was one who had received his ninth wound and was going back to receive his tenth. And he seemed to be rather looking forward to it than otherwise. The British soldier is an extremely cheerful individual. I have known him for the best part of twenty-five years; have known him at every sort of work and of play; known him in peace time and in war, in sickness and in health. I have seen him under every possible condition. I have seen him in every frame of mind, except that I have never seen him depressed. I have never seen him realize that he is beaten. He has no idea except of winning; he is either winning or going to win tomorrow. He is the cheeriest man in the world. When you have been out there you will find the same with your men.

I was talking recently with a lady from New York who asked me if I hated the Germans. She said "I hope you don't." I replied to her, "we have not the same conception of hate; the word to me carries rather a childish idea. My feeling, however, is one of utter detestation and horror of German methods and system generally which are utterly opposed to all our ideas and principles in every way." She said she hoped that as soon as the war was over I was going to forgive and forget. I said, "No, I am not. I would like to, but it would be impossible." This may seem inhuman and unchristian to you, gentlemen, but when you have been out there six months you will feel just as I do.

You will get fond of our soldiers. Two men were in the hospital, each with a fractured thigh. They were of different regiments and had never seen each other before. They were placed in beds alongside of each other, and they struck up a tremendous friendship. Each morning they would be chafing each other as their wounds were being dressed. Both were Englishmen, both married men with families. One morning when a convoy was being sent across the Channel word came at the last moment that one more patient could be taken. I said to these men, "I can send one of you this morning." Both looked across the Channel; there was a clear sea; both had been looking forward to going. Then one said, "Well, I am not feeling quite so well; I don't think I will go this morning." The other fellow said, "If you don't mind, I would rather go another time." I thought more of them than ever. We waited three or four days for another boat, and then sent them off on cots alongside each other on the hospital ship. I have never seen school boys returning from their sports in greater spirits than those two men. The ship was sunk by a submarine before reaching the other side. Sixty-three patients were on that boat whom I had been looking after for weeks. You know how much I feel like forgiving. Personally, I do not feel like it at the present time. The things we have seen, the bombing of hospitals, bombing of civilians, the sinking of hospital ships, the use of the gas, these do not combine to make one feel very forgiving.

Just one thing further I would say: I do not want to be pessimistic. I do not think of but one end, absolutely one end only, and that is a victorious one for us. But I honestly believe that a lot of water will run under the bridge, and that much hard and unremitting work has to be done before we shall attain that end. I would beg you to expect, and to prepare for a long and strenuous war. The more finished, the more unremitting your preparation, the greater and steadier your purpose, the more quickly will the war come to a satisfactory termination.

Major Franklin H. Martin: I am introduced as the representative of Medicine in the Council of National Defense. I am so impressed with a sense of responsibility that it is very difficult for me to begin my talk. This is not a little war. This is a war of a thousand years, and the privilege of having one little part in such a contest should fill any man's soul full. I wish I could say what is within me to say; the problems are so large; there is so much to do; there is so much driftwood to get rid of before we get down to brass tacks that the problems are almost overwhelming. Do you realize that the medical department of a modern army is really the backbone of that modern army? Do you realize that our forces could not remain in Europe for one month if they were not scientifically looked after by the medical department? Do you realize that the problem is different from that of a hundred years ago? Because of these things our responsibility is a large one.

We shall not accomplish all we should accomplish until all of the medical profession within the military age and physically fit are enrolled in the Officers' Reserve Corps of the Army, the Navy, or the Public Health Service. Is there anyone here tonight who is so detached from this whole proposition that he can feel that it is for somebody else and not for himself? If there is such a man, what is he going to say in five years, in ten years, in explanation? This is serious business and we need every man of military age. Do you hold lightly for a minute our enemy? Do you not realize that our enemy today is far stronger than at the beginning of the war? Do you realize that she has doubled, practically, her territory? Do you realize that the Imperial Bank of Germany holds double the amount of gold that it did the day war began? Do you realize that Germany has rolled up one country after another, organized that country and then sold the products back to these countries for gold, and bought what she had to buy with paper? Do you realize that the work of Germany is being done by her prisoners for a pittance a day? Do you realize that Germany is now accumulating the indemnity that she knows—I am sure she knows—will have to be paid later to these very countries she has conquered? That is a wise provision, but thank God! we will have England in when the bargain is made at the end, and England will see to it—if she does not, she will. If she does not, her allies will, and we shall see to it that the gold is returned and that Germany not only pays back the money collected, but a real recompense is made, so far as this is possible.

But my subject tonight is the Medical Department of the Council of National Defense. We began on the 6th of April with a standing army of medical officers of 550, with 400 in the navy. Today we have enrolled in the Officers' Reserve Corps 21,000 civilian doctors for work in the National Army of America. With the original corps of the army we have enrolled and accepted enough medical officers to supply an army of 2,500,000. That, however, will not be enough. When this war is reaching its close we must have from five to six million men in the field which means five or six times the present number of men in the army. The navy began with 400 men. It now has a corps of nearly 1,600, abundant for its need at present, since it does not expand with the rapidity of the army.

Do you realize that the department of medicine of the army has expanded 100 per cent. every two weeks since war began? Occupying at first two small rooms it now fills two great buildings under Surgeon-General Gorgas. Think of the providential condition existing in the Surgeon-General's Office at the beginning of this war! At the head of it was that great scientist General Gorgas who had been working for thirty years on a problem much larger even than this great war problem. In that office with him are the men who assisted him to put yellow fever and malaria out of business. There was Grayson, who made his reputation working with the navy; Braisted who worked to eliminate alcohol from the navy; Blue who eradicated the plague from San Francisco and did that great work in New Orleans. Think of these three men who have been at the head of the three great medical departments of the army. Don't then worry about the outcome so far as medicine is concerned. General Gorgas has said that he would not be satisfied until every man of military age is enrolled in the service. Do you know that the English are taking care of their soldiers with only two and a half to three medical men to the thousand instead of the seven provided by us? They have been working sixteen hours a day while we have been sitting here wondering whether we might do something. We could help them so much! We would be so willing to send them two or three thousand; the same to France and to Italy. With those we would have left we never would miss them—and the people at home would be better off! Therefore, gentlemen, let us get into uniform. Let us not have to explain in five years or in twenty years why we did not have part in this great war!

Major George W. Crile (introduced by Dr. Deaver as having made the way to the operating table one of the rosiest paths of life): I feel very much as if I were occupying a shell hole in No Man's Land, between our eloquent patriotic speakers and the gentleman who introduced me. I have been asked to speak of the daily routine of the Americans who have gone over to do their bit. On going to one of the casualty clearing stations I found the hospital in a tremendous turmoil of activity; men were operating with great rapidity by the aid of artificial light. At one end of the operating theater things were most active and I had a curiosity to know who was doing this stirring work at midnight. Going over to this part of the room I found it was Dick Harte. I think you in Philadelphia may be very proud of the work which your fellow surgeons are doing in France. In speaking of the life of the medical man who goes to France, let me say, first of all that you will be splendidly received. You will be located in an advantageous position. You will be given the preference on all sides by your colleagues. You will be shown all the courtesies and treated by your professional fellows as brothers. You will have the opportunity of studying the problems of military surgery from great masters and these masters in military surgery are by no means always the older men. There is a wonderful development in the younger men, men of about 30 years of age who have been on that field operating on twelve hour shifts—twelve hours on and twelve hours off. We know men of the British surgeons who have been doing that for three years and they keep on doing it untiringly. I cannot express in words too strong my admiration for these men and for those who have planned the work. Nor can I too deeply express my admiration for that greatest of all of the English medical men in the Royal Army Medical Corps, namely, the Director-General himself, Sir Alfred Keal, who thinks and talks and plans in terms of empires. Should you have opportunity of reading of anything which he does or says, I beg of you to pay the strictest attention to it; it will be of the greatest possible value.

The routine of your life in France will depend on where you are located. If you are at the base hospital you will not always be busy and in dull periods will wish you had more to do. At the casualty station the real work of surgery is done. It is a very odd thing, and seems to me almost incredible, that the farther toward the front one goes the greater—I may say almost—peace and harmony exist. Everybody is thinking along the same lines and working in the most single-minded way toward the achievement of the same end. It is extraordinary and almost a "heavenly peace" is out at the front. Among certain features of interest there is the bombing of hospitals. The hospital which I had the honor to serve had been in existence for three years. That the enemy knew it was a casualty clearing station was obvious from the fact on the map of a pilot who had been shot down the hospital was marked as such. On the night when our hospital was bombed four other hospitals in our territory and three or four French hospitals further down the line were bombed. The next night six other hospitals were bombed. Over 200 people were killed and wounded on these two nights.

Of the living conditions at the front, we have the British Army rations; they are very excellent. The weather is always chilly, damp and cold, yet the men always thrive. The men whom I know there have all been in excellent health. There is something in the whole atmosphere of this sort of life that apparently invigorates. In the front area, of course, very little surgery is done. You cannot do any good surgery until you get behind the eight-mile limit of the German guns. Not infrequently one wears a steel helmet when operating. At the time of the bombing of the hospitals the German prisoners were the only ones who cried out. They supposed the British were shelling the hospital and when they were told that it was their own airplanes which were bombing the hospital they cursed their own people as only the Germans can curse and hate. So far as I could see every German prisoner of the British has been well cared for.

A word about the British soldier. I have learned to know him better and have this to say for the Tommy, he really does not know what defeat is. You may leave him in Flanders and you can go away and leave him there for a week and when you come back he will be there, living or dead, he will be there. Tommy is a good clean fighter in a sportsman-like way and reflects the great sense of fairness found everywhere among the British people. I have never seen any boasting among the British soldiers. I never saw any expression of fear or of hate. I saw only officers of the high type English gentleman attacking this very bad business of war with all its grimness, attacking it as would a good clean sport, and the soldiers reflect what is in the souls of their officers.

I cannot tell you what will happen in this war. I believe, however, that the war will end only in victory for our countries; but, I know this: That the British may die in Flanders; some may die there, and be buried there; they may all die there, and be buried there, but I do know they will never go back to England, only and excepting after victory!

So far as I am concerned I have far more fear in regard to the intelligence of Germany than in regard to her soldiers. The soldier is inferior to the British as such. It is the organized intelligence of Germany that causes thought. I do hope that the United States in this crisis will see to it that all the intelligence she possesses will be linked up close with the national defense now and for all time. I mean by that, that all our universities ought to be, in peace time as in war, a part of our national defense. In every one of our medical schools we ought to have an organization of physicians, clinicians, surgeons, laboratory men who feel a national responsibility so that in answer to the call they will be ready for action. In order to cope with the hard materialistic philosophy of the Germans we must have our laboratories mobilized, and we must all think on national lines. I think that after the war is over all of us will for the first time in our lives think along national lines. We will think of the whole country at large and never again will we settle back to consider only our personal work in city, town or state. This is the time for such organization. The Council of National Defense is working on that line now and I hope such organization will go through. Even the small experience I have had to observe men has made me feel that we shall not realize that we are in the war until our Arlington is transferred to the foe.

Sir Berkeley Moynihan, Leeds, England: May I as a preface to any remarks that I may offer to you, say first with what rejoicing I stand before you to speak in Philadelphia. Many years ago in the days of my tender and callow surgical infancy, a visitor from Philadelphia came by chance to see me operate in Leeds. He returned to Philadelphia, and he so arranged matters that I was in the next year given an invitation to come to speak before the American Surgical Association, and in that way a fresh draft of new air came to me with a vivifying impulse, a refreshing stimulus, which has carried me on my way ever since. I want, therefore, before I speak about the war just to tell you that I have remembered, ever since those rather far off days, in deepest affection the memory of my well-beloved friend, Dr. William L. Rodman.

The question I want to ask and to which I want in a few moments to submit an answer, first of all is, Why we are at war. You will find in the history of all wars that the real underlying moral principles of war are not in the earliest days obvious; we do not at once recognize the ideal for which we are contending. Only the men who stand a little aloof, civilians, officials, men of letters, discover and reveal to us the real secret underlying the tragedy which we are enacting. This war in many respects, if not in all respects, is different from any war which has ever been waged in the history of the world before. And it is different in one important respect: that for the first time in history there is a league of free peoples willingly fighting war together, a league of peoples who could not be coerced by any government, or compelled by any autocracy to take up arms. You, we, and we together are the only ones fighting in this war who have nothing to gain, except an addition to our already heavy responsibilities. We are fighting a war of rescue. We are fighting a war for peace.

If you ask, what is the war about? If you inquire deeply enough you will find that at the bottom there are two conflicting moral systems which are ranged one against the other. Prussia which is the instigator of this war at first had a poor and infertile country. Her people were compelled to live a life of self-discipline in order to carry on existence in that barren land. It was not long before they realized that in order to increase their resources they had only to exercise their powers against their nearest neighbor. Since that time Prussia has recognized one gospel only, the gospel of plunder. War is the natural industry of Prussia. It is by war that she has added to her own infertile territories. It is by war that she has gained power and possession. It is by war that she has endeavored to make her people wealthy and contented. From the time when in 1864 Prussia first waged her large wars she revealed to us, and to the world at large, a most magnificent cohesion among her own people so that her people could be used as a weapon of defense in conquest of other rich neighboring territories. Prussia made a religion of valor. That statement would lead you to believe that the reason we are at war is because of Germany's ambition for further conquest. It is not, as you know, the answer which Germany herself gives. Germany tells you that she is fighting a war of defense, that she feared that there had been raised up around her frontier an impenetrable barrier of armed forces comprised of people who were jealous of her vast commercial increase and her supremacy in the business activities of the world. We do not for a moment believe Germany when she tells us that this is a war of defense. If that is the true answer, the truth underlying the war is German fear. Fear is the black godmother of cruelty. In my view, both these answers are wrong. This is a war, not waged on one side or the other for merely military ends. It is a moral war. It is a holy war if there ever has been one in the world. If it is a war of moral basic principles we must recognize that there can never be any compromise. You cannot compromise with a principle of evil. You cannot make peace with the devil. The principle which has inspired and animated Germany in all this ghastly business through which we are now going, and in all her ancient history, I venture to describe as the principle of tyranny. And, if you ask for a definition of tyranny, I say that it is the surrender by an individual of what is best in himself to a power lying outside himself, owning no allegiance from him but directing all his purposes in conformity with its own will and purpose. It is autocracy. It is the supremacy of the state carried to its ultimate definition. That might is right is the law by which it lives.

What have we on our side set up over against that? The one word we can in truth use is the word "Liberty," the indestructible right of every individual to be himself, to develop himself, to express himself, to grow from within. The difference intellectually and morally between the gospel of tyranny and the gospel of liberty is that tyranny desires to stamp the intelligence of every citizen in the state with a certain mark so that he can be put into the intellectual currency of the state. Tyranny desires to so train and use an individual that he shall be of use primarily to the state. Liberty, on the other hand, desires to allow to each individual self expression and freedom of development of his own character. Freedom can be exercised by many people together only when each individual is willing and able to make some surrender of a part of himself to the state. We recognize a democracy which thrives on liberty as a government made by ourselves. I think we do not care whether the laws are good laws; we do require that the laws shall be made by ourselves; that it is our hand that makes the law. We have then in this war, as I see it, these conflicting systems, tyranny and liberty, autocracy and democracy; control and repression from without, growth from within. And I am deeply persuaded that for us and for the world of science there is an issue as critical and grave as any that the world has had before this. Tyranny uncontrolled must mean restriction of the intellectual output, atrophy from long disuse, the negation of scientific processes. Tyranny means intellectual sterility and death. How impossible it is for a nation held in the fear of tyranny to give its citizens intellectual freedom. How much progress in science must first and last depend on unrestricted exercise of all the faculties of the mind, and among these, imagination is the chief. Beneath a system of tyranny you cannot have intellectual freedom; the two are absolutely incompatible. The best illustration of this is, I believe, given by the history of Germany herself in the last forty years; for, in whatever branch of science you look you find an absolute lack of original impulse in anything she has given to the world. Germany has been the intellectual clearing house to the world, but her original scientific contributions in whatever province you look are almost negligible. Therefore, for the fuller development of science it is necessary that we conquer the spirit of tyranny throughout Germany.

Those of us who have been living in England most of our lives will agree that when war broke out we felt that the national conscience had been stirred to its depths as never before. The ideals for which England lived and had fought seemed to Germany of no account. A nation's pledged word Germany thought was not worth the paper on which it was written. The conspicuous words, "a mere scrap of paper" will be handed down to Germany's posterity. We stood and still stand for the rights of small nations, which had been denied absolutely when Germany entered Belgium. Before the war we were a little in doubt as to exactly what the colonies would do if we were drawn into the European war. We have had our answer amply given. Nothing could exceed the haste, the gallantry each showed standing side by side to help us. In England we had our anxious times, but instantly on the outbreak of the war the troubled waters of our national life were stilled, all corrupting influences sank to the bottom and we realized that self-surrender was the best of all social antiseptics. The whole of the nation flew at once to arms, and we saw, if one may say so respectfully, royalty enlisting in the ranks. We saw also as a private in the war one who was the thirteenth holder in direct succession of a Scottish earldom, and the story goes (although I will not vouch for it) that ten days from the time of being put into khaki he was called on to salute some one who four years before had been his butler. Just think of the salutary influence of a thing of that sort. The whole medical profession of England stood ready to do precisely those things which the war office required of it. We have given to the army rather more than one third of our total number of doctors. With few exceptions every medical man in the country under the age of 42 is an officer in the Royal Army Medical Corps. I may tell you what happened in my own city of Leeds. We were asked if we could care for 520 military beds. After much consideration we thought we might add that number to the daily routine of our work; but, when I left Leeds we had instead of 520 beds 6,300, and I made arrangements before I came away that when I go back there will be 7,200 under our care.

As you know, the highest reward that can come to an Englishman, whether he wears the uniform or not, is being awarded the Victoria Cross. Any man who bears that personal decoration is a marked man wherever he goes. When I left England 103 Victoria Crosses had been awarded and of that number a proportion three times as great as the proportion to the entire army had been awarded to the Royal Army Medical Corps. Quite early in the war the first Victoria Cross was awarded to Captain Rankin of the Royal Army Medical Corps who was hurt in the early hours of a September day. He sustained a bad compound fracture of the thigh which in that time was perhaps the most serious of all the injuries that a man might receive. He was carried to a little dugout away from the front line. He refused to be carried any farther and for twenty-two hours he lay with his compound fracture of the thigh, dressing the wounds of the men who one after the other were brought up to him. We know now, of course, that his wound passed in that period from what we call the stage of contamination to the stage of infection. He died seven or eight days later of an acutely infected condition which was not stopped by amputation. When a man wins the Victoria Cross more than twice he is recommended for a bar. Two bars have been awarded in this war and both to doctors. Of our achievements as doctors, the greatest, of course, is that in connection with typhoid vaccination. If the military heroes of the war are doctors the scientific hero is Sir Arnold White. In the South African war in 57,184 typhoid cases there were 8,000 deaths. In this war, with an army ten times as large, on a soil very much more likely to carry contamination than in South Africa, with every kind of unhygienic and unsanitary difficulty to contend with, in 6,022 typhoid cases there were but 292 deaths. But if science has its victories it has also its disasters, because it is no exaggeration to say that but for this system of typhoid inoculation the war would have been over long ago because both armies, the Boche and our own, would have been destroyed by typhoid. In other directions we have tried to solve the carrier problem, notably in typhus, cerebrospinal meningitis. In surgery we have made considerable advance. The surgical problems presenting at the beginning of the war were of a kind which none of us had ever before met, but by degrees, owing to the work of the laboratory and the putting of the right man in the right place we have made considerable progress in the treatment of surgical conditions. In the surgery of the lung, operations have been done which are very different from anything ever done before. One feels almost as if he had had a misspent youth and a wasted career and that he ought to have started and remained above the diaphragm.

You have heard from those willing to tell you how our men behave when they are away over in France fighting or wounded. I have told before and those who have heard the story will forgive me, of what was for the British army the most critical moment in the whole of the campaign in France and what was in the opinion of those who knew the most glorious achievement in the British army, the second battle of Ypres, Nov. 11, 1914. The British army at that time had not quite been defeated, but had suffered considerable disorganization. On November 7 the line consisted of men stretching from a tiny remnant of the Belgian army to the French army on the right. No man was able to touch his neighbor. In that line was put every single man that we had at our disposal. From the Red Cross, the Y. M. C. A., anyone who could handle a gun. Men in the highest official positions were made to take their places in the line. Behind that line there was nothing of any kind whatever in reserve, not one man, not one gun, not one round of ammunition. To the men who occupied that line every available cartridge that we had in France was issued, 150 rounds apiece. There were a few machine guns, probably three or four to a battalion. They were rather poorly supplied also with ammunition. From November 7 until the morning of November 11 the enemy tried to wear out the spirits of the men by preventing them from sleeping. Those who walked along the line on November 10 said that the men were excessively weary and dirty beyond recognition with mud over their faces, hands and clothes. They were sodden over the ankles, over the knees, over the waist in many cases by the mud and water of the trenches. As the inspector passed along the line he said the men stiffened for a moment, then would fall off to sleep. On the morning of November 11 the attack was made by troops that were fresh, that were brought up in overwhelming numbers, in numbers never less than five to one and at times of seventeen to one. The second line of attack was made against us by the Prussian guard. I had under my care some of the men of the Prussian guard who came from that attack. They told me that the Kaiser himself had placed men behind the line and told them on the morning to cover themselves with glory by marching through to the coast. In the early morning of November 11 the attack came on, wave after wave against weary, sleepy-eyed, uncomfortable, cheerful Tommies, who could hardly bear to open their eyes to see what was happening in front of them. The result was that they did not hit anything until it came within about 30 or 40 yards. Over that 30 or 40 yards distance there walked the next day an officer counting the dead in heaps of eight, nine, ten and eleven. The attack had failed! That weary thin line was all that stood at that moment between civilization and barbarism. And if the Germans had known on November 12 they might have laid down their arms and walked to the coast without anybody to stop them.

As Colonel Goodwin has told you, the conspicuous, outstanding merit of Thomas Atkins is that he is the most cheery, indomitable fellow on the face of the earth. When I had to make my report to Sir Douglas Haig I ventured to say that he commanded an army that smiled. The smile never wears off. You see a man in the hospital, whatever wound he has suffered, he is still uncomplaining. We see in our soldiers—you will see just the same in your soldiers—two kinds of courage, physical and moral, and I don't know which of the two I admire the more. The physical perhaps any one of us can understand, for in the glitter and glamor and the glory of a concerted attack, it is not difficult to be brave. But, when you visit the soldier at night you cannot help thinking of his awful loneliness and solitude and the aching misery of the early hours of the day. But there is never a whimper or a whisper of regret or surrender. I shall never forget one boy. He had a bad compound fracture of his knee joint which we tried very hard to save. He got a bad contamination, a bad infection and gangrene came on. After spending two or three days trying to save his leg we decided that we must amputate. Transfusion of blood was done, the use of which in surgery we owe to Major Crile. We got him into something like fair condition to stand his amputation which was done at 4 or 5 in the afternoon. The boy was a bad surgical risk but he had to have his chance. I went to see him several times through the evening and again at half past eleven, when I said, "Well, how are you tonight?" I shall never forget how he turned his white, weary face to me and said as loudly as he could, "I am tip-top, sir"; and, at midnight, he was dead.

Now, America is in the war. We think in England that when America joined us the war took on a different complexion altogether. America will have many lessons to learn as we have had to learn in this war, and she will learn something of the jealousies of blood and iron. It is useless to deny that Germany is a great enemy. If only she had fought clean we could have respect for her. But she is an intractable enemy, ruthless, bitter and, as Tommy says, a "dirty fighter." It is so interesting to hear the men talk who have fought on our different fronts. You will never hear a Tommy express any personal admiration for the individual Boche. As man to man he holds him in contempt. But you will never hear a Tommy who has fought out in the East say anything derogatory of the Turk. He will tell you that the Turk is a gentleman, that he fights clean and that it is a joy to be in arms against him. If any of you have not read John Masefield's "Gallipoli," may I say it is the prose of this war. It will take you but an hour to read it, but I think it will be one of the imperishable memories of your life to have read that book. Many of the boys who fought at Gallipoli have told me that when a machine gun had been placed next to a hospital a polite message was received from the Turk requesting its removal. But against the Boche America will find that she has to make very long, very arduous and very intense preparation; that she will have to put up against immense losses. In America there will be many broken hearts, many desolate homes, but she will, I believe, realize in the end that it was worth while.

In the story of a statesman on the heart of the war it is stated that only those are fit to enjoy liberty who have fought and struggled for it. Many of my friends in America ask me when the war is going to end; how soon will it be before Germany is beaten? May I say most seriously that for you, as for us, we shall have our answer when every man of military age in the country is ready to offer his services and to surrender his life on the high altar of patriotism where his country has laid herself, her soul, her honor; when she has borne her illustrious dead in thousands and known that they have not died in vain but to win the victory for the most righteous cause for which the sword has ever been drawn.

And, to America and for England, what is to come out of this war? Many friendships and great inspiration; but, the most splendid thing of all is that America and England at last stand side by side. If I could have one prayer certainly answered it should be that nothing should ever tear them apart. Together, we are civilization's largest hope. When I see as I do see, going around the hospitals at home, those splendid boys of yours that you have sent to work in our hospitals, and when I remember that youth is the time for surrender to ideals, then I know that when this war is over we shall have a large number of American and English men who will stand side by side forever working with unanimous effort to attain a common purpose.

I should like our watchword to be "Together." The greatest of our statesmen of the nineteenth century in the opinion of many English men, has said "All wars are detestable, except one war—the war for liberty." America is fighting her third great war. The first war you think was against us. We don't think so at all. We think, and we now know more clearly than ever, that it was a war against that same German tyranny that we are fighting against today. As a result of that war America gained her separation from us. In her second war she had a fight within her own household. "A house divided against itself," our Lord said, "cannot stand." You had to settle who was to govern your own country. In the third war you are fighting with us. In your first war you won freedom for America. In your second war you won freedom in America. In this war *we* will win freedom for the world.

COUNTY SOCIETY REPORTS

BERKS—NOVEMBER

The Berks County Society met November 13, and was addressed by Dr. Jay F. Schamberg, Philadelphia, on "Eczema." He said arsenic is prescribed too indiscriminately by physicians, often to the patient's injury. Its value in skin diseases is extremely limited; its greatest field of usefulness is in pemphigus, in the quiescent stage of psoriasis, and in lichen planus, but here it is inferior to mercury. Arsenic is used entirely too much in acne and eczema. In all skin diseases it is important to attend to diet, hygiene and prescribed exercise. Squamous eczema is often true ringworm. Dermatitis from primrose looks like eczema but eczema is usually due to a systemic cause and not to external cause as primrose or other plants. eczema in children is due to disproportion in fats, carbohydrates and proteins. Eczema is not microbic or due to a skin parasite. There is often a double factor in skin diseases like boils in diabetes, because staphylococci flourish better in the diabetic system. An antiseptic must have better influence on protoplasm of germs than of body cells.

In acute inflammatory conditions of skin the treatment should be by soothing agents which tend to lessen congestion, outpouring of serum and constriction of blood vessels. Ointments tend to retain heat more than lotions. A good lotion is zinci oxidi 2 drams, glycerini 1 dram, lime water 6 ounces. Boric acid is mildly antiseptic but irritant; calomel, mercury bichlorid and other salts are antiseptic and non-irritant. Iodoform and aristol are very low in germicidal properties, not equal to calomel. Remove ointment with sweet oil, not with soap and water which irritate and are too alkaline. Frequent use of soaps makes the skin harsh and dry; if too mild does little good, if too strong does harm. In acute eczema use mild remedies; in chronic eczema use tar, salicylic acid, ammoniated mercury; in erythematous eczema limit protein foods, avoid meat, fish, foul, eggs; eat stewed fruits, vegetables and cereals. Mixed diet with vegetables is preferred to milk alone. Use soothing ointments and lotions. In case of children splint the arms to prevent scratching.

A case of an initial syphilitic lesion was then shown. Dr. Schamberg said a positive Wassermann is a most important biological test in this disease, while a negative Wassermann is not conclusive evidence of the absence of syphilis. In syphilis the infection enters through the skin or mucous membrane. A defensive process throws an exudate around the spirochetes, the lymph glands become enlarged and indurated, and is accompanied by fever aches and pains, and eruption, roseola. In the second stage there are papular, pustular and erythematous lesions. Spirochetes are sent to all parts of the body, liver, spleen, lymph glands. It was formerly advised not to treat the patient in the primary stage of the disease, but it is now advised to begin treatment with salvarsan at once, as later the disease gets into the cortical cells and is hard to eradicate, being often anatomically inaccessible. By the use of salvarsan a chancre in twenty-four hours loses its infectivity.

Clara S. Keiser, Reporter.

ERIE—OCTOBER, NOVEMBER

The meeting of Erie County Society was held at the Public Library meeting room, October 2, Dr. George S. Dickinson presiding.

Dr. James A. Gardner of the University of Buffalo read an interesting and able paper on "Prostatic Hypertrophy." The many phases of this condition were thoroughly analyzed, and the various surgical measures for its relief were clearly and scientifically discussed. The speaker laid stress on the necessity of determining the degree of acidity in every case, many of which respond to a correction of hyperacidity, where such exists. Dr. Gardner's paper was ably discussed by Drs. Roth, Bell, C. W. McCallum, Lick, Drozeski and Cranch.

The November meeting of the Erie County Society was held in the Public Library meeting room on the evening of November 6, Dr. George S. Dickinson presiding.

Dr. Daniel Fiske Jones of Boston addressed the society on "Right Lower Quadrant Pain." After reviewing the earlier status of the operation for removal of the appendix, Dr. Jones enumerated and discussed the causes of pain in the right lower quadrant. Stress was laid on the misinterpretation of gallbladder symptoms referred to the region of the appendix, and vice versa. Declaring his adherence to the proposition that every acutely inflamed appendix should be promptly removed once a positive, clear-cut diagnosis is made, Dr. Jones confined his further discussion to the "chronic" appendix. In the classification of the chronic appendix, there may be (1) the appendix which manifests its derangement by a definite attack in which definite symptoms are manifested; (2) where the attack is not featured by definite pain or localization; (3) where there are no definite local symptoms whatever. Any chronic appendix may fall within this classification. A large percentage of appendices removed because of definite symptoms, or routinely, are reported back by the pathologist as "chronic appendicitis." Is the surgeon to be held responsible for the confusion thus resulting? From 90 to 100 per cent. of all appendices show some degree of inflammation. The appendix is not more sensitive than any other part of the intestinal tract. The tenderness elicited must be differentiated from the normal tenderness consequent on deep palpation. Slow dilatation of the appendix may not, and usually does not, cause pain. A large thickened appendix may give no pain. In 71 per cent. of cases the "chronic" appendix coexists with inflammatory conditions in other organs. The rôle of adhesions in the production of pain is overestimated. Postoperative adhesions are seldom a cause of pain. Appendiphobia is a cause of pain which is relieved by appendectomy. Pain may be produced by enteroptosis, overloaded cecum, incompetency of the ileocecal valve, posture, muscle strain, sacro-iliac strain, caries of the lower dorsal and lumbar spine, low movable kidney, colitis and gallbladder disease; all these conditions must be reckoned with as possible causes of pain in the right lower quadrant.

The diagnosis of postoperative adhesions is frequently unjustifiable and more of a hindrance than a help. In neurasthenics, and those beset by a fear of appendicitis, and who complain of pain, powerful suggestion often serves to relieve the imaginary symptoms.

Dr. Jones' paper was ably discussed by Drs. Harrison Dunn, C. G. and D. H. Strickland, Silliman, Chaffee and Darrow.

T. M. M. Flynn, Reporter.

LEBANON—NOVEMBER

The Lebanon County Society met in the courthouse, November 13. Dr. William R. Roedel gave an address on "Pernicious Anemia." In defining the subject he said that it was distinguished by a great destruction in red corpuscles, and that it persistently went from bad to worse. It is one of the most dreaded of maladies in that its termination is death in the large majority of cases. The pathologic conditions exhibit deposits of fat, atrophy of the gastric mucosa, depleted bone marrow and often enlarged spleen. The blood is pale and watery and the red cells are often reduced to 1,000,000 or less. The hemoglobin is reduced and there is usually a general reduction of the other blood cells, too. Dr. Roedel said that there were three etiologic categories into which cases of pernicious anemia could be grouped: (1) those in which there was no discoverable cause for the hemolysis; (2) those in which the cause was found postmortem; (3) those that could be traced antemortem. Under Class 2 he mentioned obscure malignancy and parasites; under Class 3 he mentioned prolonged hemorrhage, diarrhea, mental shock, pregnancy and fevers. The speaker pointed out the fact that males were more often stricken than females after the thirty-fifth year, and that it occurs mostly during middle life. The outstanding symptoms develop slowly, and the transition from health to anemia is quite insidious, and include dyspnea, palpitation of heart, languidity, headache, vertigo, tinnitus, nausea and prostration. The treatment is very unsatisfactory. Hygiene stands among the first considerations; light nutritious food given at short intervals and massage have been found useful. Arsenic is the most valuable drug.

George R. Pretz, Reporter.

PHILADELPHIA—OCTOBER

The Philadelphia County Society met October 24, with Dr. Moses Behrend, vice president, in the chair.

"Some Unusual and for the Most Part Unrecognized Forms of Ringworm" was presented by Dr. M. B. Hartzell: Every one is familiar with the ordinary forms of ringworm such as are represented by scaly annular patches on nonhairy parts, and by round partly bald areas covered with stumps of hairs on the scalp. Both are common in children and the latter is particularly limited to childhood. Very few, however, are acquainted with the less frequent varieties seen for the most part in adults and which resemble in some instances, eczema of the hands and feet, hence known as eczematoid ringworm, or approach both in their clinical and histological features the infectious granulomata. It is of the unusual and, in most instances, unrecognized forms that I shall speak, showing examples of unusually severe and extensive ringworm of the axilla and thighs, eczematoid ringworm of the hands and feet, and deep ringworm of various regions presenting severe and extensive follicular inflammation in a few instances accompanied by ulceration. Some twenty lantern slides were exhibited illustrating the clinical and histological features of these unusual varieties of ringworm.

"Interpretation of the Causes of Salvarsan Reactions Based on Laboratory Studies" was presented by Dr. Jay F. Schamberg and illustrated by lantern slides. That dioxydiamino-arsenobenzol dichlorhydrate (salvarsan) is the most remarkable synthetic chemical compound introduced into medicine, and the premier remedy in syphilis and certain other affections has been definitely established. An exhaustive study of the toxicity of this drug undertaken with my colleagues, Drs. John A. Kolmer and George W. Raiziss, has yielded us the following conclusions:

1. Salvarsan may be used in concentrated solutions up to 0.6 gm. in 10 c.c. *in animals,* without any evident increase of toxicity.

2. The failure to neutralize solutions of salvarsan with alkali leads to an increase in toxicity of 50 to

60 per cent. in solutions of 0.5 to 1 per cent. concentration.

3. The addition of a moderate excess of alkali beyond the amount required for neutralization does not increase the toxicity, though untoward effects are possible.

4. The use of sterile, freshly distilled water appears to possess advantages over sterile, stale-distilled or non-distilled water with regard to toxicity, although this difference is not pronounced.

5. Salvarsan in alkaline solution tends to undergo oxidation on standing, with consequent increased toxicity. The rapidity of oxidation and degree of toxicity, however, are variable. If a delay of two or three hours after preparation is unavoidable in its use, the solution should be kept in a cylinder full to the stopper that no air may be present.

6. Immediate, early, and delayed reactive symptoms may occur after the use of salvarsan. The "immediate" symptoms are due to a paresis of the blood vessels; the "early" symptoms coming on in a few hours are febrile and gastro-intestinal in character, and the "delayed" may be referable to the brain or the liver and gastro-intestinal tract.

7. The etiologic factors in the relative phenomena may be related to the patient, the technic, and to the medicament. We believe that the most important factor is referable to the drug. It is our belief that the immediate vasoparetic reactive symptoms are due to traces of an unidentified impurity in the drug, which we have for convenience termed *substance X*, and that they are not due to "arsenoxid."

9. Salvarsan and its congeners are not compounds of absolute chemical purity. We cannot, therefore, expect absolute constancy in biological effects.

10. Salvarsan and its congeners may vary, within certain limits, in therapeutic effect, and to a greater degree in toxicity. The ampoules obtainable in the open market exhibit striking variations in toxicity.

11. Even the poorest compounds are tolerated by animals in much higher amounts than the maximum dose administered to man. There is, therefore, nearly always a latitude of safety.

12. We believe that the commercial products should be tested out intravenously as well as subcutaneously, and that they should be tolerated by rabbits in the dose of 60 mg. per kilo of body weight.

13. Salvarsan is a safer substance than mercury and can be tolerated intravenously by white rats in fifty times the dose of the latter, weight for weight.

"Roentgen-Ray Treatment of Diseases of the Skin" was presented by Dr. George E. Pfahler: The roentgen ray may be used in diseases of the skin for (1) its stimulating effect, as in eczemas, although comparatively few eczemas should be treated by the roentgen ray; (2) for its destructive effect, as in epithelioma; (3) to produce atrophy, as in the treatment of keloids. Many obstinate chronic inflammatory lesions yield to roentgen-ray treatment and to its stimulating effect. About 85 to 90 per cent. of the basal cell epitheliomata will yield to treatment by the roentgen ray and all of this type of epithelioma should yield to the combination of electro-coagulation and roentgen-ray treatment, which combination I believe to be the best. Squamous cell epitheliomata are more difficult to treat but I believe the best results are obtained by a combination of electro-coagulation and roentgen ray. This is particularly true of lesions of the mucous membrane of the mouth. Keloids can be reduced by roentgen-ray treatment continued at intervals over a long period of time. When practicable, good results may be secured by carefully excising the keloid and following this immediately with roentgen-ray treatment sufficient to prevent recurrence.

Dr. Albert Strickler: I agree with Dr. Hartzell in his statement that these cases of ringworm are far more frequent than we suspect. Examination of these cases for the ringworm fungus is so easily made that I feel that a further spread of the knowledge of the cases of real ringworm will add greatly to the possibility of cure. Regarding the reactions of salvarsan a rather interesting incident occurred in a case of syphilis which Dr. Schamberg asked me to look after during his absence from the city. I used the same preparation in the treatment which Dr. Schamberg had used and the man became very sick on the table. He called me on the phone in two or three days and told me that the reason he became sick was that he thought I was not competent to give the treatment. The case illustrates, I think, the importance of the individual idiosyncrasy in the administration of salvarsan. I am glad to hear Dr. Pfahler say that acne and eczema should not always be treated by the roentgen ray. Many cases of eczema are due to food; some are due to nerves. These are not often benefited by the roentgen ray and when this treatment has been used for some length of time cure by any means is most difficult. I have a young girl under my care at present who had been treated for two years with the roentgen ray for eczema of the face and arms. A study of her case shows that food is the etiological factor. While the condition of her arms has improved very much, the atrophy and the dilatation of the blood vessels of her face caused by the roentgen ray, she will keep for the remainder of her life.

THE TRUTH ABOUT MEDICINES

NEW AND NONOFFICIAL REMEDIES

Since publication of New and Nonofficial Remedies, 1917, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Paraffin for Films (Surgical Paraffin, Plastic Paraffin). — Paraffin intended for application to burns, etc., should be more ductile and pliable than the official paraffin, and be liquid at or below 50 C. Thin films should be pliable at or below 28 C. and ductile at or below 31 C. and somewhat adherent to the skin. Paraffin for films is used mainly in the treatment of burns. It is used also to prepare "paraffin covered bandages" and to seal gauze dressings. In the paraffin treatment of burns, the wound is cleaned and dried; a thin coating of liquid petrolatum or melted paraffin for films is applied, and is followed by a thin layer of cotton and another layer of cotton; another layer of melted paraffin is applied, and the whole then bandaged.

Stanolind Surgical Wax.—A brand of paraffin for films melting at 47 C., being pliable at or below 25 C. and ductile at or below 29 C. Standard Oil Company of Indiana, Chicago (*Jour. A. M. A.*, Nov. 3, 1917, p. 1525).

Silver Protein-Squibb.—A compound of silver and gelatin, containing from 19 to 23 per cent. of silver in organic combination. Like other silver protein compounds, it is used in from 1 to 25 per cent. or stronger solutions for prophylaxis and treatment of the sensitive mucous membranes, particularly in gonorrhea, conjunctivitis and other infections of the urethra and of the eye, ear nose and throat. E. R. Squibb and Sons, New York.

Arsenobenzol (Dermatological Research Laboratories). — A brand of arsenphenol-amine hydrochloride. Its actions, uses and dosage are the same as those of salvarsan. It is supplied in ampules containing 0.6 Gm. The General Drug Co., New York City.

Acetylsalicylic Acid-Milliken. — A brand of acetylsalicylic acid complying with the standards of New and Nonofficial Remedies. It is sold only in the form of 5 grain capsules and 5 grain tablets. John T. Milliken and Co., St. Louis, Mo.

Acetylsalicylic Acid (Aspirin), Monsanto.—A brand of acetylsalicylic acid complying with the standards of New and Nonofficial Remedies. Monsanto Chemical Works, St. Louis, Mo. (*Jour. A. M. A.*, Nov. 17, 1917, p. 1695).

PROPAGANDA FOR REFORM

"Patent Medicines" Here and in Canada.—The federal law governing the interstate sale of "patent medicines" prohibits false and misleading statements in regard to composition and origin and false and fraudulent therapeutic claims. The Canadian law offers no protection against false, misleading or fraudulent statements that may be made for products of this class. As a result, many claims made for "patent medicines" when sold in Canada are not made when the same preparations are sold in the United States. An examination of Dodd's Kidney Pills, Doan's Kidney Pills, Williams' Pink Pills for Pale People, Paine's Celery Compound, Hall's Catarrh Medicine, Hood's Sarsaparilla, Dr. Chase's Nerve Pills, and Gino Pills as sold here and in Canada leads to the conclusion that the "patent medicine" industry as a whole is founded on falsehood, and that misleading and false claims will be made for such preparations, at least in the majority of cases, just so long as manufacturers are subject to no restraint except their own consciences (*Jour. A. M. A.*, Nov. 10, 1917, p. 1636).

Shotgun Vaccines for Colds.—There is no reliable evidence for the value of mixed vaccines in the prevention or treatment of common "colds" and similar affections. The Council on Pharmacy and Chemistry accepted for New and Nonofficial Remedies mixed vaccines only on condition that their usefulness has been established by acceptable clinical evidence. So far it has not admitted any of the "influenza" or "catarrhal" mixed vaccines (*Jour. A. M. A.*, Nov. 10, 1917, p. 1642).

Iodeol and Iodagol.—Iodeol and Iodagol (formerly called Iodargol) are the products of E. Viel and Company, Rennes, France. They have been widely and extravagantly advertised in the United States as preparations containing colloidal, elementary iodin, and with the claim, that, because of the colloidal state of the iodin, they possessed the virtues but not the drawbacks of free iodin. As the result of chemical examination, pharmacologic, bacteriologic and clinical investigation and a study of the submitted evidence, the Council on Pharmacy and Chemistry declared the products inadmissible to New and Nonofficial Remedies because they did not contain the amounts of iodin claimed; because the iodin was not in the elementary or free condition but behaved like fatty iodin compounds, and because the therapeutic claims were exaggerated and unwarranted. The American agents, David B. Levy, Inc., announce that the sale of Iodeol and Iodagol has been discontinued (*Jour. A. M. A.*, Nov. 17, 1917, p. 1725).

The Carrel-Dakin Wound Treatment. — Arthur Dean Bevan holds that the value of the Carrel-Dakin method of treating infected wounds has not been established. He has been forced to the conclusion that Carrel's work does not meet the requirements of scientific research. Bevan believes that the choice of antiseptics in the treatment of infected wounds is of little moment, and that the use of the Carrel-Dakin fluid, like Koch's lymph, Bier's hyperemia and the vaccine therapy of acute infections, will have a short period of popularity (*Jour. A. M. A.*, Nov. 17, 1917, p. 1727).

Sphagnum Moss, a Surgical Dressing.—In England, sphagnum moss, or peat moss, is being used as a substitute for absorbent cotton. The dried moss is said to absorb twenty-two times its own weight of water, while absorbent cotton will not absorb more than six times its weight. For surgical use the dried moss is packed loosely in muslin bags which are then sterilized by heat or chemicals such as mercuric chloride (*Jour. A. M. A.*, Nov. 24, 1917, p. 1790).

Adulterated Imported Drugs.—The U. S. Department of Agriculture announces action against imports of adulterated drugs. Belladonna root was adulterated with yellow dock; cantharides was adulterated with so-called Chinese blister flies, and cinchona bark offered for entry was deficient in alkaloid. Other drugs were illegally labeled (*Jour. A. M. A.*, Nov. 24, 1917, p. 1792).

Bell-ans (Pa-pay-ans, Bell).—Bell-ans, formerly advertised as Pa-pay-ans (Bell) in medical Journals, is now advertised in newspapers and in medical journals. Among the extravagant claims made for this preparation is the claim that there is no derangement of the digestive organs on which the proper dose of Bell-ans will not act quickly and pleasantly. Instead, proper treatment must aim to determine the cause and attempt its removal, the choice of drugs depending on the conditions that give rise to indigestion. The treatment of indigestion by a single prescription or combination is wholly irrational. While Bell-ans, under its old and new name, has been alleged to contain papain or to be some preparation of the digestive juice of the fruit of *Carica papaya* with other substances, chemists have failed to find papain or to determine the digestive power of the tablets. Bell-ans is essentially a tablet of sodium bicarbonate and ginger, and has all of the virtues, which are few, and all of the limitations, which are many, of a tablet of sodium bicarbonate and ginger. The Council on Pharmacy and Chemistry examined Bell-ans nearly eight years ago, and the statements made in that report are as incontrovertible today as they were then (*Jour. A. M. A.*, Nov. 24, 1917, p. 1815).

Salvarsan, etc.—Besides the German salvarsan and neosalvarsan, now practically unobtainable, the Council on Pharmacy and Chemistry has recognized diarsenol, neodiarsenol and arsenobenzol (Dermatologic Research Laboratories). It has under consideration salvarsan made by the Farbwerke-Hoechst Company, New York. Before accepting these preparations, the Council requires evidence to show that the products are manufactured under supervision which may be expected to insure their chemical identity and uniformity, and freedom from toxicity. However, in the past, untoward effects have been reported from German salvarsan and neosalvarsan, particularly with the last shipments of neosalvarsan. Recently untoward effects have been reported from neodiarsenol. It is expected that within a short time all salvarsan, neosalvarsan and the various products identical with these will be tested by the government (*Jour. A. M. A.*, Nov. 24, 1917, p. 1819).

THE PENNSYLVANIA MEDICAL JOURNAL

Official Organ of the Medical Society of the State of Pennsylvania

VOLUME XXI
NUMBER 4

ATHENS, PA., JANUARY, 1918

SUBSCRIPTION:
$2.00 PER YEAR

ADDRESS /

CHAIRMAN'S ADDRESS *

SAMUEL McCLINTOCK HAMILL, M.D.
PHILADELPHIA

A new child has been born to the Medical Society of the State of Pennsylvania. You are gathered to witness its christening. Since the form to be followed in this ceremony differs, of necessity, from that used in the majority of christenings, it may not be amiss to announce the fact that the infant whose birth you celebrate was given a very unusual amount of prenatal care. Indeed it was placed under the direction of not one but a group of skilled physicians from the moment of conception. Many consultations were held and the final plan of procedure to safeguard it was never reached until all methods had been freely discussed. When the period of accouchement arrived the case was turned over to the very efficient group of accoucheurs represented in the Board of Trustees, who acted always in consultation with the House of Delegates. Perhaps the child should be congratulated on finally reaching the light of day in a good state of nutrition after having passed through the hands of so many consultants.

It is, or at least it should be, the duty of the accoucheur to place the infant he has piloted into the world in the hands of the pediatrist very shortly after its birth. In this instance the accoucheurs have done their part, and those of us who are especially interested in the diseases of children have had turned over to us a young and helpless infant that needs to be tenderly nursed, wisely fed and properly exercised until it is sufficiently developed to progress under its own initiative. This, gentlemen, is a serious responsibility, and to meet it squarely will require a deal of patience, a lot of wisdom and unlimited perseverance. Let us accept the responsibility with the determination that this child shall live, grow and prosper and soon become the favorite child of the family because of its ability to give to the members of this society the kind of service that may rightly be expected of any efficient pediatric society.

In one respect it is a misfortune that the Pediatric Section should have been created this year. The absence of so many of our fellow members on military duty has made it difficult to formulate a program and to maintain it. However, the fidelity with which those who agreed to prepare papers have stood by their promises is worthy of our sincere appreciation. In another respect we are fortunate in the selection of this present year for the beginning of our work. There has been no time in the history of the world in which the child has been a greater economic factor than at the present, and for this reason there has never been a time in which the child has had a greater chance to receive the consideration due him than the present.

To appreciate this statement it is necessary for us to review briefly the effect of this war on the population of the world. Indeed, we may wisely retrace our steps a bit further and remind ourselves of the fact that for some years before the war there had been a tendency toward depopulation as a result of a decreasing birth rate in most of the countries of the world.

When this war was called into existence by the lord of Kultur it resulted in the sudden withdrawal of millions of men from civil life and the establishing of conditions in each of the belligerent nations that led to a rapid decline in the birth rate. This decrease has varied in the different countries, but it has been appalling in all of them.

At the beginning of the war, as would naturally be expected, the interest of the people and their governments was centered on problems that were directly connected with the development and maintenance of their armies. The result was that the problems of civil life were neglected. All the welfare agencies, in every land, that were dependent for their existence on the voluntary effort and contributions of the people lost both their workers and their finances. The contributions to war loans, the maintenance and carrying out of the work of institutions such as the Red Cross left the ordinary private agencies of civil life stranded. The

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* Delivered before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

withdrawal of physicians and nurses trained and working on public health problems handicapped the activities of governmental institutions. The natural result was that some private agencies went out of business, all of them curtailed their work, the governmental departments became less efficient as the result of which infant morbidity and mortality increased by leaps and bounds. This experience was common to all belligerent countries.

Coincident with this the casualty lists began.

In short, the various nations found themselves facing the solution of these problems: (1) A decreasing birth rate; (2) an increasing death rate; (3) an appalling destruction of adult life on the field of battle; (4) an even greater maiming of men, thousands of whom were totally incapacitated, and many thousands more who were so wounded as to be only partially capable in the years to come.

What was to be done?

Manifestly, the deaths and wounds from battle could not be materially lessened as long as the war continued, and an increase in the birth rate in war time was impossible. Indeed, as men fall in battle and new men are called to replace them the birth rate naturally decreases still further.

There was one possible way, however, of stemming the tide of destruction, and that was by so reducing the infant death rate as to, at least, in part compensate for the loss in population that the other conditions were producing. To this end each of the various governments bent its energies.

What will be the fate of the smaller countries that have quaffed the cup of Kultur served them by the Hun, no man can tell. The clouds upon their horizons are black and they seem to have no silvery lining.

We have no recent information from the land of the boche, but prior to the severance of diplomatic relationships between Germany and the United States we knew that her birth rate was very low, having been reduced to 40 per cent. of the normal, and that her infant mortality rate which had been lowered in the second year of the war was increasing so fast that the government had forbidden the publication of statistics. We knew further that the conditions in civil life were very distressing, that women and children were being exploited that the war might be won.

In August, 1914, the Reichstag, in order to be freed from all trammels and to advance the cause of Kultur, passed an emergency law giving the Chancellor power to set aside all the factory laws and regulations for the well-being of women, young people and children employed in factories. An investigation made in September, 1915, by the German Metal Workers Union as to the conditions under which women were working revealed appalling conditions; 36 per cent. of the women were found to be working fifty-four hours in the week and 63 per cent. over sixty hours. In many cases they worked from seventy-five to eighty-four hours and the shift workers sometimes worked from seventeen to twenty-four hours at a stretch.

We have no authentic figures from Italy, Austria or Russia as to morbidity or mortality in civil life at any age period. We are entirely justified, however, in assuming, from our knowledge of the conditions in general in civil life, that morbidity and mortality are both high in all age periods.

Regarding France and England we have more accurate information. The experiences of France are probably suggestive of what is transpiring in Austria, Russia and Italy and possibly Germany. At the same time they stand as a warning of the destructive possibilities of modern warfare.

France has been an invaded country since the beginning of the war. The blow that struck her was severe and in its suddenness unexpected. Her initial casualty list was enormous. These facts, together with the overwhelming problems of the future, demanded the immediate utilization of every resource to place the army in a position to withstand the onslaught of the Hun. The inevitable result was neglect of the civil population as the result of the withdrawal from civil life of the people qualified to maintain the welfare of the civilian. From the very beginning of the war the drain upon the medical and nursing professions was most severe. As the war progressed this situation became more and more serious until today there is only one physician to every 8,000 of the civil population, and there is no such thing as a public health nurse outside military service. Until recently when the Red Cross began to send physicians and nurses trained in infant and child welfare work to France her civil population was being cared for, in large part, by unqualified volunteer workers.

What has been the result? The birth rate in France in 1913 was 18.8 per thousand of the population. In the year 1916 it reached the astounding figure of 8.6 per thousand. This means a decrease of approximately 405,294 births in a single year. Before the war the birth rate equaled the death rate. It has been estimated by statisticians that this decrease in the birth rate plus the increase in the death rate in civil life and the added death rate of military life will result in a reduction in the population of France for the year 1917 of 790,000, or more than three-fourths of a million. Her losses in 1916 were 788,000, only 2,000 less than the estimated loss for the present year.

What has happened in England?

England has never been invaded. Her military development has been more gradual, which means that there has been a less rapid withdrawal of men from civil life. This procedure has had a less sudden and severe influence upon her birth rate. In general, England has had a much better opportunity to adapt herself to the changing conditions. Nevertheless, in England, as is inevitable in any warring country, the casualty list and the decrease in birth rate has happened. As has been said, England also experienced a sudden and striking initial increase in her infant death rate due to the same causes that were active in other countries, namely, the diversion of the interest and activities of the government and her people from the problems of civil life to the preparation of her army for military service.

In 1914 the infant death rate in England and Wales was 105 per thousand living births, in 1915 it was 110 per thousand; but England has seen the handwriting on the wall. The decreasing birth rate, the increasing infant mortality, the civil deaths of other age periods and the fatalities of battle were spelling depopulation. England's response to this situation has been the perfecting and extending of her machinery to save the lives of her infants. Increased appropriations for child saving have been made. All government agencies have been rendered more efficient, her health visitors have been increased to one to every 500 infants born, and all of her private welfare agencies have been voted grants of money, so that instead of curtailing they might extend their work. The result has been most striking. England's death rate for 1916 was reduced to 91 per thousand living births, a saving over the previous year of 19 lives in every thousand born. In this way England has been able to, in large part, compensate for her decreasing birth rate.

If England is able to maintain this standard and end this hellish war without a marked decrease in her population, of all the European countries involved, England's future is the most assured. There will be no shortage in man power in the years to come, and England will have established on a firm basis the machinery with which to insure to the children born to her a place in which they can dwell in safety.

In every warring country the number of children born will continue to decrease in proportion to the number of men called to arms, the number of women taken into industry and the increase of poverty in the essentials of life. The casualties of battle, the killed and the wounded will continue as long as war holds. The influence of these new conditions added to the factors which contributed to sickness and death before the war can yield but one result, a rapid decrease in population.

It is such a procedure as England is following that will compensate in part for such losses and justify the statement that "the answer to the question, 'Who has won this war?' will be given twenty to thirty years from today." Naturally, it will be the country that so maintains the nutrition of its people as to yield the highest degree of efficiency, and most nearly maintains its rate of increase.

What is the situation in Pennsylvania and what are we to do? We too are at war and the problems of England are to become our problems. The present plan of our Government calls for an army of 5,000,000 men. When 5,000,000 men are taken out of civil life the influence upon the birth rate of the land will be tremendous. It is no argument to the contrary that the majority are unmarried. Unmarried today, yes; but most of them would have been married in another year. Their absence, therefore, has a direct destructive influence upon the birth rate.

The casualties of battle are coming to us too. Soon the black band of mourning will be common to our eyes and soon our tears will be shed with the blood of our sons.

Deaths as they have happened before the war must continue.

In all warring countries as has been said there was an initial increase in the deaths of infants under one year of age. With the knowledge that is ours will Pennsylvania repeat the error of the other countries? Will we become so deeply involved in the problems of war as to neglect the children born into the world? England's neglect, increasing her death rate from 105 per thousand living births in 1914 to 110 per thousand in 1915 added to her casualty list the lives of 4,375 infants under one year of age. For every child that dies four are ill. In other words, there were 17,500 wounded in addition to the dead.

God knows that without war we have a problem in the state of Pennsylvania. In 1915, with a death rate of 110 per thousand living births, we had the distinction of having next to the highest infant death rate of any of the states in the registration area. We also stood sponsor for the city having the highest infant death rate, 196 per thousand living births was its record.

Gentlemen, dare we stand idle in the face of the possibility of an increase in this rate? The blot upon us is bad as it is. In such a time as this when the life of a child becomes a great economic factor it becomes the duty of every medical man to stand behind the health authorities of his town, his country and his state. Where inactivity or indifference exists we must see to it that new life is put into the work, and where men are alive to the situation and working earnestly for the improvement of things let us work side by side with them in their endeavor to make the State of Pennsylvania a safer place for the helpless infant to live in. Above all, let us stand firmly behind the president of this society in the splendid endeavor he is making to safeguard the health of the commonwealth of Pennsylvania.

The basis of all health work is education. England was able to reduce her infant death rate from 110 per thousand living births to 91 in a single year by multiplying her educators. The government financed every private welfare agency of standing and multiplied her health visitors (the women who go into the homes of the people and tell them how to care for their babies and children), so that she had one to every 500 children born.

We need educators in Pennsylvania. Each of us with our special knowledge of the prevention of disease should be an active educator in the communities in which we live. Let us give at least a portion of each day to learning something of the maternal mortality and the infant and child mortality and morbidity in our own home towns. I know the figures would appall some of you. Having learned the results let us study their causes, and then apply ourselves to their removal. Our assistance is greatly needed.

The man power of this country is threatened. Emigration has ceased, and immigration will probably never be a very potent factor in the increase of our population. We have established literacy laws which in normal times would have caused a great decrease, but what is of much more significance the loss of man power in the countries which were once the source of our supply has been so great that these countries are considering the advisability of placing a permanent embargo upon emigration which will practically end this source of increase in the future.

We are therefore to be dependent upon our own resources. The situation is alarming. Today we have not enough men to do the work of our industries. If men are to be killed in battle or maimed for life, if our birth rate decreases, and by any chance our infant death rate is permitted to increase we will create economic conditions which it will require generations to overcome.

Is it possible to control the situation? Yes, without question. Our present death rate is 110 per thousand living births. New York City, with its desperate problems of alien population, poverty, overcrowding, immorality and crime, maintained an infant death rate for the first seven months of the present year of 83 per thousand living births.

If that is possible in New York it is possible any place in this country. Should Pennsylvania reduce her infant death rate to 83 it would mean a saving of 27 lives in every thousand born. On the basis of the number of births in 1915 (217,979) in round figures, Pennsylvania would save 5,885 babies' lives. This would do much toward compensating for the decreased births and deaths caused in battle. Is it not worth every ounce of energy that we can contribute?

Let those of us who for various reasons are detained in civil life make the accomplishment of this result our contribution to our country in this hour of her agony.

1822 Spruce Street.

AUTOMOBILE ACCIDENTS IN NEW YORK

In a statement issued by State Commissioner of Health Herman M. Biggs an interesting and significant comparison is made between the number of deaths in the state caused by automobile accidents and typhoid fever, as well as with other causes of death. While typhoid fever mortality was reduced 26 per cent. in 1917, the deaths from automobile accidents increased so much as to take the place of typhoid fever as one of the principal preventable causes of death. In September, 1917, there were 155 deaths from automobile accidents, more than the combined mortality from homicide and suicide, and undoubtedly a much greater number of injuries involving prolonged illness and more or less permanent disability. Of these deaths 55 were in New York City, 63 in upstate cities and 37 in rural districts. Typhoid fever caused 84 deaths among 796 cases during September. For the year 1917, up to September 30 there were 755 deaths from automobile accidents, while for typhoid fever there were 434 deaths among 2,840 cases.—*Bulletin* New York State Department of Health.

ORIGINAL ARTICLES

ARTHRITIS: GENERAL CONSIDERATIONS AND CLASSIFICATIONS*

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Arthritis signifies inflammation of a joint. Better defined, it is the reaction of a joint to an inflammatory process. We now group under this heading what was scattered under widely separated chapters in the textbooks of a few decades ago, and we look on arthritis in a great majority of the cases as the manifestation in and about a joint of a constitutional disturbance. This constitutional disturbance may be septic or toxic, probably for the most part septic in origin, even though the joint is found to be sterile, due to the fact that the inflammatory process may persist for a considerable time after the bacteria which caused it have disappeared, or the invading micro-organisms may be localized in the bone marrow or periosteum, in close proximity to the joint, and thus be the cause of an active synovitis. If the constitutional disturbance is a toxemia, it may be of bacterial or of chemical origin. I have said that we regard arthritis as a manifestation of constitutional disturbances in the majority of cases; the balance are due to trauma, either direct or indirect, acute or chronic.

Important factors in the evolution of our knowledge of this subject have been the rapid and dramatically absorbing development of roentgenology and bacteriology. The roentgen ray has made joint conditions accessible. Bacteriologic studies of the blood and of aspirated contents of inflamed joints and of local infections elsewhere have yielded positive information as to the causative micro-organisms and their ports of entry. Moore and Edwards, in one of the last numbers of the *Journal of Infectious Diseases,* report that their blood cultures yielded positive results in one fourth of the cases of chronic and in one half of the cases of acute arthritis. It is recognized, of course, that the presence of the micro-organisms in the blood or in the joint exudate does not prove that this organism was the cause of the trouble, but it offers a fair presumption of that hypothesis. Great impetus has been given to the study of arthritis by the discovery that arthritis with practically all of its complications and sequelae could be produced in dogs by the intravenous injection of streptococci.

We have found that the same infection may cause tonsillitis, pneumonia, appendicitis, cholangitis, cerebral meningitis, arthritis, nephritis, endocarditis, the symptoms of amyotrophic lateral sclerosis or any combination of these, and probably many other conditions which we have been in the habit of regarding as unrelated diseases. This is due to accidents of localization, virulence and resistance. The converse is also true. A great variety of infections, if localized in the joints, may produce practically the same conditions there. Nathan says: "With the exception of the specific changes which certain micro-organisms induce wherever they become localized (tubercle bacilli and spirochete), all the morbid changes to be found in joint diseases can be ascribed to variations of an inflammatory process. The changes are not specific; the variations are not reactions to definite etiologic influences; nor do they correspond to definite clinical entities."[1]

I hold this to include the Charcot joint, which I believe to be a septic arthritis that has developed or relapsed during the course of tabes or syringomyelia. It cannot be a syphilitic infection, for syringomyelia is nonspecific.

According to this hypothesis, the following is the usual sequence of events as regards arthritis. Pathogenic bacteria proliferate on a mucous membrane (of the respiratory, auditory, genito-urinary or digestive tract, or one of their accessory sinuses) or in an infected wound in sufficient numbers and virulence successfully to invade the blood stream. We then have more or less noticeable symptoms of septicemia (chills, fever, sweating, pains in head, eyes, back, muscles, bones, and general malaise, leukocytosis, gland enlargement, renal hyperemia, etc. These symptoms may last several days and be very severe, or they may pass unnoticed and only be elicited later by careful questioning. The bacteria circulating in the blood find a point of low resistance in one or several joints and colonize there. The general symptoms subside with the disappearance of the bacteria from the blood. The local process in the joint progresses, with corresponding inflammatory reaction, for an indefinite period after the general infection has disappeared. The local inflammation is limited finally by the

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* Read at the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

[1] Jour. Med. Research, 1917, 195.

virulence of the invading micro-organisms and the immunologic reaction of the host.

At the same time there is a natural reaction in the direction of repair. When this reparative process is inhibited, degeneration occurs. After the disappearance of the bacteria and of the inflammatory reaction they have caused, we have left either a joint restored to the condition it was in before the inflammation occurred, or a joint showing all possible combination of destruction, repair and degeneration of any or all of the various tissues of which the joint is composed (bone, marrow, cartilage, periosteum, connective tissue, ligaments and synovial membrane), with troublesome contractures, relaxation or ankylosis.

To what extent arthritis may be due to toxins floating in the blood, as seems probable in gout, lead poisoning, serum sickness, Connellan-King and possibly other infections is yet to be determined.

In considering the diagnosis of morbid conditions in the neighborhood of a joint, we should proceed by two stages: First, is there an arthritis or the effects of an arthritis? We must bear in mind and carefully exclude osteomyelitis, bursitis, adenitis, phlebitis, tenosynovitis, myositis, abscess in muscle sheath, neuritis, neuralgia, "lightning" pains of lues, which may suggest arthritis by varying with the weather, pre-eruptive stage of acute posterior ganglionitis, tumors of bone, lipoma (at ankle), hemarthrosis (purpura and scurvy), mechanical strains due to mechanical causes and hysteria. The writer has found an infected cambric needle buried in the periarticular tissue of a knee, perfectly simulating a suppurative arthritis, and without a suspicion as to the cause. In another case a knee was locked, semiflexed, by a piece of a belt pin, and was diagnosed "movable cartilage," until careful examination was made. Second stage: Having decided that we have to deal with arthritis, what is its nature, cause and origin and in what stage is it? If septic, where is the port of entry and can it be eradicated? Cultures should be made from suspected foci; the blood picture, tonsils, urine, etc., must be studied; blood cultures made and complement deviation tests for lues, gonorrhea, tuberculosis and the like. Gland cultures may be necessary and tuberculin tests. Aspirated fluid from joints and sometimes from spinal canal should be studied, especial attention being paid to cells, bacteria and antibodies. If pneumococci are found the type should be determined. Radiograms should be made of the joints, teeth, accessory nasal sinuses, and, in certain cases, of the chest, abdomen and long bones.

The importance of a painstaking study of the anamnesis cannot be exaggerated. Coincident or precedent affections may be most significant.

A discouraged patient presented himself for treatment of a tubercular knee joint. A history of the discharge of a few crumbs of dead bone from the nose outweighed a positive denial of lues, and salvarsan cured the knee!

A child of 9 was brought to the writer with a history of recurring attacks of polyarthritis several times per year ever since an attack of scarlet fever six years before. She was undersized, anemic, and emaciated. She had had chorea also several times. She had had tonsillectomy without benefit, and had been industriously poisoned with a convincingly advertised vaccine containing streptococci, staphylococci, micrococci-catarrhalis, colon bacilli and pneumococci in large doses over a considerable period. Each attack of arthritis or chorea (there had been three in preceding six months) was preceded by earache, rupture of membrane, and purulent discharge. The obvious deduction was a chronic mastoid, following the scarlet fever. This was corroborated by the roentgen ray and treated surgically, with cessation of attacks and rapid improvement in the child's general health.

Keep in mind the possibility of a rheumatic endocarditis preceding the joint involvement. If adventitious heart sounds are found in a patient seeking relief from general malaise with slight fever and moderate leukocyosis, make blood cultures, look for local infection and try to forestall the polyarthritis. In the same way the neurologic manifestation from pressure of inflammatory exudate on spinal dura and on the nerve roots may precede or overshadow the joint phenomena (atrophy, spasticity, root or lancinating pains, acroparesthesia, local sweating, edema and glossy skin). These two syndromes, carditis or spondylitis, are so apt to accompany septic arthritis as to have diagnostic value. If we believe the arthritis to be of toxic origin, very much the same course of investigation must be pursued. If the arthritis seems to be of chemical origin, we must search the history and the patient's body for evidence of metallic poisoning, blue line on gums from lead or bismuth, metallic salts in the urine, stippling of red blood corpuscles and other corroborative phenomena.

We are not yet able to give a complete and satisfactory etiology of gout, but I believe it is commoner in the United States than is generally supposed, and that the acceptance of this belief would lead to its more frequent recognition. If we are familiar with its clinical characteristics and have access to biochemical and roentgenologic facilities, the differentiation is not difficult.

I repeat the clinical characteristics, because they are frequently overlooked and of great aid: sudden onset in the very early morning hours, localization most frequent in metatarsophalangeal joints of the great toes, pain of excruciating character, local tenderness extreme, shiny redness, slight edema, desquamation (not due to vesicants) during subsidence of attack. I have recently known a clinician of many years' experience to have his own toe split open by a surgeon in the search of pus, although the attack was typical of gout. There is often recurrent bursitis. The contents of these bursae eventually become solid and thus large tophi may be formed. The patient is usually past 35 years of age, while the subject of acute septic arthritis is usually under 35 when he has his first attack. Gouty patients never show the profuse sour sweating so characteristic of acute septic arthritis (rheumatic fever). They are not relieved by intensive treatment with salicylic acid. They are relieved by large doses of colchicum or atophan and purin-free diet. Attacks recur. Gouty patients sooner or later show evidence of contracted kidney and high blood pressure. There is disclosed by the biochemist a disturbance of uric acid metabolism, although this has not yet been clearly and definitely formulated. In the gouty, the uric acid content of blood is usually considerably above normal, and the elimination by the kidneys of an excess of uric acid, experimentally given, is slow and incomplete.

The ears and knuckles of all patients should be examined routinely for chalky tophi. These may precede the first attack of gout by several years. Scrapings should be examined microscopically.

Uric acid deposits, being exceedingly pervious to the roentgen ray, are revealed in the radiogram as small shot-like lacunae in the bone shadows and by punched-out semicircular defects of the articular ends of the bones of the affected joints, which are often symmetrical. There is also rarefication of the bones in the neighborhood of the affected joint, but this is also found in chronic septic arthritis.

A female patient, 67 years of age, complained of burning and aching in the knees and progressive bowing of the legs, the latter corroborated by her daughter. There has been marked loss of stature. Father had chronic arthritis; mother was subject to quinsy in early life. Patient was subject to quinsy in early life; lost all her teeth from pyorrhea ten years before; trouble in her knees had been developing for years; first noticed within two or three years after the removal of teeth. She is 5 feet tall and weighed 200 pounds. Wassermann test was negative. There was no evidence of spinal sclerosis or of syringomyelia. Urine was of low specific gravity, considerable albumin and numerous casts. The knees feel warmer than surrounding parts. There were Heberden nodes, lipping of distal ends of second phalanges of all fingers, never painful or tender, possibly some fluid exudate. Radiograms showed rarefication of articular ends of bones with areas of condensation and hyperplasia, lipping spines, etc. The patellæ were almost immovable. Bowing was largely due to compressing of inner condyle of femur and inner tuberosity of tibia by excessive weight of the body acting on bone rarefied by chronic septic arthritis. This was a case for the orthopedist. Braces of heavy steel to take the weight off the knees were devised and applied by Dr. Silver. A rigid diet for the reduction of her weight, salicylates for the relief of pain, and forced exercise to the limit of her endurance, brought about great improvement. Radiograms taken after two years' treatment showed increase in bone hyperplasia, exostoses, absorption of cartilage and bone, condensation of bone and loss of demarcation of bone. Twenty-minute temperatures have always been negative. The albumin has disappeared from the urine, the specific gravity is normal, and there are very few casts.

This case illustrates the familial disposition to septic arthritis. I have seen a family of three big finely developed Irish American brothers, all hopelessly invalided by septic endocarditis, which accompanied arthritis and led in each case to mitral stenosis.

The problem of treatment is also complex. The internist, the immunologist, the biochemist, the orthopedist, are all indispensable. It should be emphasized particularly that the mechanical functions of the joints are mechanical problems and should be met by the orthopedist. They should not be attacked by the internist any more than purely surgical problems.

The treatment may be briefly referred to by stages:

1. *Prophylaxis.* The avoidance and eradication of all possible "ports of entry"; proper diet and adequate and suitable exercise.

2. *Stage of General Infection and Localization.* Rest; intensive treatment with salicylates; intensive treatment with colchicum and atophan; intensive treatment with salvarsan and mercury; closure of all possible ports of entry; purin-free diet in cases of gout; low carbohydrate diet in cases of septic arthritis; proper attention to all the emunctories; mechanical protection of the joints against harmful mechanical influences.

3. *Stage of Localized Infections of Joints.* Whatever is applicable from the preceding heading. Furthermore, it must be borne in mind that the removal of the original focal infection does not influence a metastasis already established. Only in the case of arthritis due

to toxemia can treatment of the port of entry affect the joint. An infection localized in joint or joints may be favorably influenced by autogenous vaccine (Connellan has reported a success after five years of persistent vaccine treatment); by intravenous injection of foreign protein, colloidal gold or sulphur; by the oral administration of thymus extract through its influence on nutrition; and by certain hydrotherapeutic cures, notably certain of the mud baths of Europe, and Mt. Clemens, Hot Springs, Ark., and others in this country. In debilitated and anemic patients forced feeding may be of service. In other cases limitation of the carbohydrates may be strikingly beneficial. Adipose patients should be reduced and held at a minimum weight.

4. *Stage of Deformities and Disabilities Left in the Wake of the Inflammatory Process.* Here the orthopedist, who in suitable cases should have been consulted frequently, takes charge of the case. Surgical operations to correct or mobilize, mechanotherapy, exercises or splint and supports, hydrotherapy, high frequency electricity, fibrolysin, radium.

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THE METABOLISM AND TREATMENT OF RHEUMATOID ARTHRITIS *

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I have been asked to speak on the relation of metabolism to arthritis. There was a time when the arthritides at large were regarded as problems solely of metabolism, but with the recent important advance of knowledge concerning the rôle played by focal infections the metabolic aspects of the question have been regarded with decreasing importance, until at present many observers believe all arthritides to be due to a focal infection of some kind. I wish to emphasize here my own firm belief in the frequent importance of infectious foci and their causative relation to arthritis. I cannot believe that this relation is invariable, however. Whatever I may have to say in regard to metabolism in arthritis should be considered as supplementary to the well-established rôle which infections may play, and in no sense at variance with it.

Clinicians have long been aware that even in the presence of arthritides which we now know to be infectious in type, agents which influence the body metabolism may all prove significant in influencing the disease.

In other words, when infectious foci are operating to cause arthritis, the symptoms of arthritis may sometimes be modified importantly in the cases of less severity by such agents as thyroid extract, roentgen ray, exercise, radium and so on. The benefits to be obtained by these measures are variable and generally very limited, but they cannot be denied as existing. In the last five or six years I have been very much interested in the subject of arthritis from the chemical or metabolic standpoint. This interest arose out of the observation that a certain proportion of these cases can be demonstrated to be due, not to an infectious focus in a surgical sense of the word, but to some less obvious mechanism of the body chemistry. The pendulum, having swung to the extreme exclusion of focal infection, is now swinging back to a midway point where dispassionate consideration finds room for both agencies.

The profession everywhere recognizes now the importance of a diligent search in arthritic patients for infections in the tonsils, teeth or elsewhere. Unfortunately, however, after such a search has been made, it frequently happens that the desired improvement does not follow; and there exists, furthermore, a not inconsiderable number of patients in whom no focus of infection can be found. The combined number of cases of one or both of the above types is fairly large, and it is concerning this class of cases and the efforts to help them that I wish to speak.

While studying the metabolism of two patients having rheumatoid arthritis who were being exposed frequently to the roentgen ray, the writer observed a certain degree of subjective benefit coincident with the very great increase in the elimination of nitrogen, chiefly in the form of uric acid, which this agent induces.

The writer also observed in individuals the subject of rheumatoid arthritis, who had undergone a major operation, that following the anesthetization there was a period of subjective relief, and it seemed possible that the subjective benefits following operation might be due to the institution of the so-called basal metabolism, and the opportunity given Nature to rid herself of the end products of metabolism. This idea is in harmony with the beneficial effects, in this disease, of arsenic, roentgen ray and other agents mentioned above, at least some of which operate in the opposite direction, namely, to hasten the body metabolism, and, so to speak, "whip the flagging horse." If these facts were true, it seemed possible that there might be a midway point at which the subject of arthritis could utilize a lowered intake of food with satisfaction to his nutritive needs and at the same time without injury to his joints as expressed by the arthritis. The correctness of this hypothesis, at least in part, was indicated in a small series of patients, from which there developed further experimentation and a larger experience which form the subject of these remarks.

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* Read at the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

In the last three or four years the writer has published a number of conclusions, based on this work, the essentials of which are as follows: 1. There seems to be in each case a limit of toleration for carbohydrates on the one hand and to a less degree of proteins on the other. 2. After arrest of the arthritis following curtailment, to the requisite level, of these elements in the diet, the diet can sometimes be gradually increased until in some cases it differs but little from that in health. 3. Care is necessary to determine the highest level of metabolic equilibrium at which the arthritis will subside, and the patient should be maintained at or near that point. 4. While the general health improves with the subsidence of the arthritis, and though the patients seem to acquire a toleration for a larger dietary, the general principles above described must be rigidly observed or relapse will occur.

It will be seen that there exists apparently in many cases of rheumatoid arthritis a level of intake of carbohydrate and protein food above which the individual is ill and below which improvement or entire convalescence may follow. This level varies with the individual case, and no set rule can be given for ascertaining it. Furthermore, at the present writing, the exact rôle which the carbohydrates, protein and fat, respectively, play is not apparent, but in any event the fats are less important in their relation to nutrition and can be dispensed with entirely if necessary.

It seems pretty clear from feeding experiments that the carbohydrates play a very important rôle. Curtailment of this factor has formed one of the bases of treatment, and good results have followed therefrom. But, further, out of four cases in which the attempt was made, it was possible to induce exacerbations of the disease, in three cases previously rendered free from it, by feeding pure carbohydrate, in the form of cane sugar. On withdrawing the carbohydrate convalescence again set in, so that the evidence that carbohydrate plays a causative rôle in this connection is at least strong.

The rôle of protein cannot now be fully stated, but at all events the individual requires for maintenance a certain amount, roughly, a gram per kilo of body weight under normal conditions, which cannot be entirely dispensed with, and it seems pretty clear that quantities in large excess of the minimum requirements can be and have been satisfactorily borne by patients who have undergone convalescence and cure. It seems to be unimportant whether this protein be administered as beef, chicken, milk or eggs or as vegetable protein. It should be recalled here that about 50 per cent. of the protein molecule passes to carbohydrate within the body, which may eventually explain the analogy between these two foodstuffs as to their limit of tolerance by the economy.

Experiments during the past winter in connection with fat seem to indicate that, although it is not possible to replace the curtailed caloric intake entirely by fat, it may be possible to give part of this in the form of fat without detriment to the arthritis and with benefit to the nutritive needs. It was at one time hoped that it might be possible to replace the caloric deficit from a low diet entirely by fat and so avoid the loss of weight which cannot well be spared in emaciated patients. This hope has been realized in two cases, but there seems to be a distinct limitation from the metabolic standpoint to the amount of fat which can be fed compatibly with subsidence of the arthritis. It is apparently necessary sometimes for the individual to lose weight in order to utilize the injurious products which reach the tissue cells.

Two cases have been carried through to marked convalescence, however, in which an actual gain of several pounds weight was caused by the administration of fat in such quantities as not only to replace but even to exceed the caloric deficit which would otherwise have existed.[1]

In brief, then, the facts seem to be that it is necessary to reduce the carbohydrates by an important amount, varying with each case; that it is necessary to reduce the proteins considerably, but relatively not so much, and third, although the fats cannot be handled with impunity, that they may be used with caution to increase the caloric value of the ingested food and meet in some degree the loss of weight.

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[1] There is some experimental evidence at hand, not yet fully published, to show that the protein intake may sometimes be increased beyond that ingested during active arthritis compatibly with the subsidence of the arthritis. This increase of protein is of course coincident with reduction of carbohydrate.

It is not the purpose of the writer to detail here the various experimental efforts in laboratory studies which have been made hoping to gain some added light. Suffice it that they have yielded more negative than positive information, but it is at least clear from studies of the carbon dioxid tension of the aveolar air and from the hydrogen ion concentration of the urine that the disease is not an acidosis in the true sense of the word. Studies of the carbon dioxid tension of the aveolar air have also shown no difference in the degree or rapidity of utilization of carbohydrate by subjects in good health and suffering from arthritis. Furthermore, it is clear from observations on the uric acid, the urea and non-coagulable nitrogen of the blood, both during ill health and convalescence, that there is no "backing up" of the nitrogenous blood elements. In conjunction with other findings, these further indicate that the difficulty of elimination by either the bowels or kidneys is not a causative factor.

Except in cases on the borderland of health it is futile to endeavor to increase very materially the elimination, as it cannot keep pace with the ever-present access of toxic material. Anaphylactic experiments with egg albumin have further yielded no evidence to show that the nitrogenous elements are at fault.

It is entirely conceivable that the rôle played by the foodstuffs depends upon bacterial activity in the intestinal tract. If so, observations, as yet incomplete, suggest, subject to later modification, that it is referable to the substrate of food rather than to a specific type of organisms per se, but in any event there is no question that the final evidences of the disease are truly metabolic, using this term in the widest sense of the word. Furthermore, the end-results within the body can be influenced by agents which are known to concern intimately the body metabolism so that whatever the origin, whether purely metabolic or bacterial within the intestine, the later steps in the causation of this disease must be regarded as metabolic in nature. It seems likely at present that at least some of the substances causing the damage arise in the cleavage of the carbohydrate molecule, either bacterially within the intestine or physiologically, and that an important phase of the disease concerns the ability or inability of the tissue cells to utilize and destroy these mid-products.

In undertaking the treatment of a case it is the writer's practice to observe the individual for about a week, during which time an accurate record is kept of the entire food intake in terms of grams and cubic centimeters. This can be readily done by any nurse trained in modern methods, and requires nothing more elaborate than a pair of scales weighing to one gram. During this probationary period the patient is urged to live as nearly as possible according to his usual habits as regards exercise and general activity.

It is very useful to have the ingredients of the probationary diet prepared according to some definite formulary. The most useful in this connection is perhaps to be found in a small book entitled, "Food Values," by Edwin A. Locke, in which is set forth nearly all of the useful table articles with their caloric value appended.

From the record then of the individual's intake of food over a period of from three to seven days, the average daily caloric intake required to keep him in equilibrium can be fairly closely approximated. Since the symptoms of disease have persisted in general under these conditions, it follows that any method of treatment which involves a curtailment of food must reduce the food intake to a point at least below the average which has been ascertained. Furthermore, it is of prime importance that the nutritive needs of the body be met or kept well in mind and, in making reductions as severe as those sometimes entailed here, it is important that no harm be done to the individual. One can be sure of this only if the actual value of the intake ordered is known. It is important, of course, to give as much food as the individual can tolerate without injury to his joint structures, from which it follows, in the author's experience, that diets have had to undergo several changes, the first, or even the second, being too ample to achieve the results desired, but, it is well to proceed cautiously in the above manner, especially as some cases of long standing and apparently severe arthritis manifest striking improvement upon relatively slight modifications in their diet.

It may be said that a recent case in a young subject requires in general a slight modification as compared with an advanced case of long standing, and if the average normal intake be found high, it may be assumed with fair probability that the new diet need not be very restricted. On the other hand, if the average food intake be found low, it is obviously necessary to strike an even lower level. In drawing up a new dietary the proteins and carbohydrates are the chief factors to be considered and the caloric value decided upon must begin with the calories from these sources. Certain other factors are also important, however. For example, in patients living upon a caloric intake of 3,500 calories there is a very good chance that a reduction of this amount to say 2,500 calories will still leave them ample for all reasonable nutritive needs and at the same time relieve them of the surplus of food amounting to 1,000 calories. On the other hand, if the individual be ingesting normally only 1,900 calories, as some times occurs in the secondary invalidism of the disease, it is plain that no such reduction can be made. It is, however, necessary here to strike an even lower level of, say, 1,500 or even 1,200 calories, and so on. There is an obvious limit to the degree to which this reduction can be pushed.

There are many articles of diet, whose bulk is considerable for the food value contained, which serve the several purposes of filling the stomach, stimulating peristalsis and affording the psychic satisfaction of eating when hunger is present. Such foods are apples, tomatoes, spinach, celery, beets, cabbage, turnips, lettuce, etc., which are exceedingly useful to take the edge off the appetite and serve as a basis for the really nutritive but restricted articles which follow in the form of bread, eggs, meat, etc.

As for the carbohydrates and proteids, it is immaterial how they be administered within the given amounts determined upon, though a nearly exact estimation is easier if they be simply prepared. For example, there is great difficulty in allowing for the fat in fried articles, and these should therefore be avoided. So, too, cream gravies or dressings are objectionable for similar reasons. Until convalescence is well under way, it is best to adhere to the simple staples, such as bread, butter, sugar, milk, roast, broiled or boiled meat or fish, rice, boiled or roasted potatoes, etc. No one diet can be chosen that is suitable to all cases, for the reasons given above, but in illustration, the following may be cited as the dietary at one period in the management of a severe case in a young girl of 20 in good nutrition.

This diet yields about 1,700 calories. It must be emphasized again that no one diet will suit every case.

BREAKFAST	Gm.	Calories
One orange	250	96
One egg	50	83
One slice bread	30	81
Butter	5	40
One cup coffee + one tablespoon 20% cream	...	54
11 a. m., one tablespoon olive oil	...	121
LUNCHEON		
Vegetable soup, 6 fluidounces	...	25
Spinach	50	26
Lettuce q. s.		
Mayonnaise, one tablespoon	...	187
Tea or coffee + one tablespoon 20% cream	...	54
One teaspoon sugar	7	28
One apple	150	72
4 p. m., one tablespoon olive oil	...	121
SUPPER		
One apple	150	72
Meat	50	100
One slice bread	30	81
Butter	10	80
Tea + one tablespoon 20% cream	...	54
One teaspoon sugar	7	28
Lettuce q. s.		
French dressing, two tablespoons	...	148
At bedtime, one tablespoon olive oil	...	121

The proportion of cases which respond along these lines cannot be accurately given, because so much depends upon the cooperation of the individual, the amount of structural harm already done, the severity of the disease, etc., but in general it can be said that of some fifty cases in only five or six has the influence of a reduced caloric intake failed to appear. This influence cannot always be pushed to a successful conclusion for a number of reasons; for example, in the presence of emaciation, anemia, advanced heart disease and the like, the already unstable equilibrium may be further upset by a lowered food intake, however slight, and this may then be strongly contraindicated; on the other hand, there is nothing in these measures per se which is injurious, provided they be closely watched, and since the first publication of the writer's experiments, the safety with which restriction of diet can be pushed to great length has been well illustrated by many experiences in connection with diabetes. It is, of course, of the highest importance that individuals should be put at modified or complete rest coincidently with a slight or severe curtailment of their energy intake, and this cannot be emphasized too strongly. The weight must also be constantly watched.

The first evidence of improvement under these measures is generally seen in the smaller joints, such as the knuckles of the hands, and if these have been the seat of inflammation it may be possible as early as the third day to detect a dimpling or wrinkling of the skin denoting a lowered tension of the tissues. The small joints yield earlier than the large, for obvious reasons, and it is extremely important to differentiate accurately at all times between the lowered function due to purely inflammatory processes and that due to the secondary results of long-standing arthritis, such as contracted tendons, eroded bony surfaces, structural deformity and the like.

It may be said that, in common with practically all other diseases, the more chronic and the more advanced the condition the more difficult treatment becomes, but there are some notable exceptions to this, and one case in particular, which had lasted nineteen years, gave most striking improvement.

It must not be supposed that all cases will respond equally well. Wider experience may develop more types in which no response can be detected, but it is safe to say that in a large number, perhaps a large majority of cases which have yielded to no other measures, definite benefit or cure can be seen. The general nutrition of the individual largely determines the degree to which treatment can be pushed, and in every case the individual and not the arthritis must primarily determine the vigor of treatment. It is of small benefit to improve the arthritis at the expense of the health of the individual as a whole.

The writer cannot too strongly emphasize this point, because any severe dietary procedure is a two-edged tool and must be used with the greatest possible caution. Young individuals respond in general better than older ones, though this again has its exceptions.

The cooperative temperament of the patient is also a determining factor in treatment and apparently gratifying results may be negatived by a weak personality and lack of perseverance often due to merely the inroads of chronic disease.

It is as true of treatment here as in any other disease that there must be an intelligent selection of those cases which best deserve an effort. In relatively young individuals of good nutrition, in whom no focus of infection exists, especially if they be not very far advanced, the most vigorous attempt is more than justified and it is of course precisely in this class that the most significant results can be seen.

It is interesting to note that in conjunction with the evidences of arthritis, certain other conditions may present which are expressions of the same toxemia and may markedly improve under this treatment. For example, most cases of rheumatoid arthritis have more or less neuritis, and the writer has seen striking examples of sciatica thus treated which have been dissipated. Neuritis seems to be another expression of the underlying factors which cause arthritis itself, and the same may be said of certain obstinate types of headache in which no other causative factor can be found.

The writer has found cod liver oil of great advantage after response to treatment has been clearly evidenced and the patient has settled down to protracted adherence to a low diet. Under these circumstances when the toxemia has been removed the blood may rise from figures of anemia to those of complete normality.

As convalescence proceeds, it is often possible to increase the food intake, in some cases very measurably, so that the necessity for reduced activity may grow less or disappear, and the individual may be allowed to resume his full activities. Some patients have been able to return to an unrestricted diet and remain at the present writing, three years after treatment, entirely well.

There are so many points to be considered in connection with a topic which concerns the nutrition of the body, not to mention the pathology of arthritis itself, that a consideration of all of them is impossible in the brief time at disposal, and the writer can hope to do no more now than to emphasize the underlying principle upon which treatment is based and indicate the general manner of carrying it out.

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THE DIAGNOSIS OF FOCAL INFECTION *

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Focal infection may be simple, multiple, primary, secondary, chronic or latent. Secondary or systemic infection is due to septic emboli or toxic substances, or both, in the primary focus, entering the general circulation by the lymphatics or blood. The diagnosis of acute focal infection is usually easy because the symptoms and signs are so well marked that they direct attention to the region involved. The diagnosis of chronic focal infection is somewhat difficult, but close observation usually elicits signs and symptoms sufficient for diagnostic purposes.

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* Read at the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

The recognition of latent focal infection is most difficult, and, as the designation implies, it is characterized by absence of local signs and symptoms; and systemic infection may be present, absent or recurrent. Arthritis without obvious cause is usually secondary to a latent focus of infection, and the diagnosis is supported if leukocytosis exists or lymphocytosis with a normal or subnormal leukocyte count. The diagnostic value of lymphocytosis is moderate. Chronic arthritis and polyarthritis, secondary to focal infection, frequently occur with a normal leukocyte and differential leukocyte count, due to acquired tolerance. When a latent focus of infection is suspected, it is usually located in one of the cavities of the head.

After the age of 45 years focal infection is usually located in the teeth or gums; whereas in adolescents and in young adults, it is usually in the tonsils. Occasionally an examination of the gums and teeth reveals no evidence of disease, and yet a roentgenogram shows evidences of one or more periapical abscesses, and the reverse is also true. The micro-organisms and virulency may be determined by opening the pulp canal and passing a broach into the periapical space and culturing the materials thus secured. Occasionally infective materials may be aspirated from the periapical space. Commonly the infected tooth carries a cap, or the crown contains a filling sufficiently large to cause death of the pulp, and the roentgenogram shows canals only partly filled. The spaces about the roots of abutments of bridges are frequently infected, not only by way of the pulp canal, but also from pyorrheal pockets extending deep alongside the pericementum. When these deep pyorrheal pockets are occluded, the septic material, thus retained and deprived of oxygen, is capable of causing arthritis. Pyorrheal pockets are sometimes overlooked even by a careful dentist. An infected root may penetrate the antrum of Highmore and cause a secondary suppurative sinusitis, which in turn may cause arthritis; and in the mandible a focus of infection may not only extend to the adjacent teeth, but also into the cancellated structure of this bone, and considerable pus has been discovered in this region when disease has existed unrecognized for many months.

Not infrequently focal infection, dental in origin, exists unrecognized for many months or years, and occasionally when multiple, only one or two are diagnosed, and in consequence arthritic patients receive only partial benefit from partial removal of the cause of the disease.

Many dental roentgenograms are so poorly made that they fail to disclose evidences of root disease when present; and occasionally films made by an expert roentgenologist fail to reveal periapical abscess or infection. Occasionally the shadows of certain of the roots of the teeth are overlaid or obscured or are not on the films, so that errors from these sources occur. On the other hand, many dentists overlook evidences of oral sepsis, dental in origin, which are due to pyorrhea; or when the dental septic focus has been recognized, the treatment may be so ineffectual that the infection continues or recurs. It is therefore well to bear in mind that oral sepsis may be present, even though a roentgenologist or dentist gives a negative report. Occasionally a tooth is septic, even when it does not react to heat, cold, electricity and percussion. A periapical abscess in a tooth, otherwise normal, may be due to secondary infection unless the gum or adjacent teeth are diseased.

The usual organism in a latent focus of infection located in the roots of teeth is the streptococcus viridans or the streptococcus hemolyticus. The severe pains of polyarthritis or neuritis, even though long continued, occasionally disappear in a few hours after the removal of a focus of infection, suggesting that the pains were caused by toxic substances elaborated by the micro-organisms.

The tonsils are frequently the seat of focal infection, causing arthritis, and these glands may be moderately or considerably enlarged, and the mouths of the crypts may be filled with decomposing material which, when cultured, shows streptococci usually of moderate virulence.

Sometimes the tonsils are normal in size and appearance, and patients may deny ever having had disease of the throat, and yet when removed show a subtonsillar or intratonsillar abscess.

A small and buried tonsil may be infective and when removed is surprisingly large because it has occupied the lower portion of the the space between the anterior and posterior portion of the fauces. Patients sometimes state that their tonsils have been removed and inspection apparently corroborates their statement; but closer examination reveals a remnant of tonsil the crypts of which have been closed by adhesive inflammation, causing retention of infective material, thus inducing an unsuspected focus of infection. In certain cases it is possible to recognize by palpation lymph nodes in the area drained by the tonsil, and if they enlarge or become sensitive, indicate an acute septic adenitis. Usually palpable cervical glands are hard and painless, resulting from previous infection, and are important diagnostic aids in searching for a latent focus of infection, tonsillar in origin.

If after a careful and minute examination of all regions of the body where latent foci may be present and none are found, and nevertheless arthritis occurs in a young adult, it is desirable to perform an exploratory tonsillectomy, that is, removal of the tonsils for diagnostic purposes. Frequently apparently normal tonsils when removed reveal infection or abscess. Sometimes the focus of infection is not in the tonsil, but in the peritonsillar space, and occasionally is due to nasopharyngeal adenoids. Any one of the sinuses, including the mastoid, may be the seat of a suppurative inflammation and become a focus of infection.

Arthritis from sinusitis is more apt to occur if drainage is interfered with, and in my experience ethmoidal or sphenoidal sinusitis is more apt to cause arthritis than a similar infection of the maxillary or frontal sinuses or the mastoid.

Chronic suppuration of the middle ear with involvement of the adjacent bony structures may secondarily cause arthritis.

Occasionally chronic suppurative prostatitis, with single or multiple abscesses, or suppurative seminal vesiculitis, causes arthritis. Pyosalpinx, suppurative cholecystitis and appendicitis may cause arthritis; and occasionally arthritis complicates the course of ulcerative endocarditis, secondary to focal sepsis, the arthritis then becoming a tertiary manifestation. Arthritis is one of the most common manifestations of a focus of infection, and this focus may simultaneously produce endocarditis, pericarditis, myocarditis or endarteritis.

Not infrequently polyarthritis, erroneously called rheumatism, secondary to focal infection, ultimately recovers, without removal of the cause, but as a rule a relapse occurs later.

The focus of infection may remain local for an unknown number of weeks or months and later become systemic and cause a second or third attack of polyarthritis.

The great importance of focal infection as a cause of joint and bone disease is slowly being realized.

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DISCUSSION

ON PAPERS OF DRS. LITCHFIELD, PEMBERTON AND DALAND

Dr. Joseph H. Barach, Pittsburgh: I had expected to illustrate my discussion of the subject under consideration by some slides, but the facilities at hand make that impossible. These slides would have illustrated the type of cases to which Dr. Daland in particular referred, and also such as were referred to in the papers of Dr. Litchfield and Dr. Pemberton.

Our present conception of the causation of arthritis has come about within the last few years, and the change of view marks a great step forward in medicine. It has simplified our diagnosis and it indicates with much precision the proper treatment of a large class of patients. During the last year I have kept careful record of these cases and correlated my results. It gives one extreme satisfaction to note in what a large proportion of the cases we can isolate the exact cause; and the causative factor once found we are on the way to its removal or proper treatment. To do this, however, one must apply himself diligently and work patiently if he is to be successful.

Beginning at the mouth, we find pyorrhea as a source of trouble. One case of pyorrhea caused an enteritis lasting over a year, and disappeared within two weeks of the time that a number of infected teeth were removed and proper treatment applied to the gums. Another case was one of pyorrhea, cholecystitis and arthritis in which the cholecystitis and arthritis disappeared when the pyorrhea was corrected. It is not only that we relieve an enteritis, or cause the subsidence of a cholecystitis, but we stop the disease process and we avert surgical operations and perhaps save many persons' lives by stopping a disease process at the point of inception.

Alveolar abscess is a cause of many disorders. One of my patients was confined to her bed six weeks with an attack of acute arthritis. Her recovery was incomplete and there was not a week in the past eighteen months during which she was not disabled. A systematic search of her case in the hospital proved that she had an alveolar abscess. We removed the offending tooth and from that day her symptoms disappeared. Culture from the abscess cavity showed a streptococcic and pneumococcic infection. Who will say that an accidental exposure to cold or wet might not have precipitated a pneumonia, and subjected her to all the risks of such a disease?

Diseased tonsils we need only mention as a focus of infection; there occurs to us immediately, acute rheumatic fever, subacute arthritis, endocarditis, nephritis, and a long array of diseases too numerous to mention.

Otitis media, mastoid disease, antrum disease, sinus disease, all these locations in which pus may form, and in which drainage is difficult, are prominent foci from which arthritis, myositis, and neuralgia may arise. I have seen examples of all of them in my series of cases.

The generative organs may hold foci of infection from which arthritis develops: in the female, the fallopian tubes, the endometrium, or cervix; in the male, the prostate or seminal vesicles or epididymis. My list includes examples of all these. Whenever the pyogenic organisms become localized and form minute abscesses, the infection emanating from such foci may result in arthritis.

In nearly all of the above mentioned instances we may note that the infection is primarily one which has traversed one of the channels of the body, such as the nose, throat or mouth, the bronchial tubes, the urethra, the vagina, the cervix, or endometrium. The bacteria having become lodged on the epithelial surface travel downward into the epithelial invaginations, away from contact with the external atmosphere, and there multiply and become foci for infections elsewhere.

My cases afford one more example, which I wish to mention. It was the case of an infected compound fracture of the foot, in which the abscess area of the foot served as a focus for a generalized subacute arthritis of long duration.

All of the above mentioned foci may produce arthritis or their allied conditions. As the previous speakers have stated, the one thing for us to do is to remove the foci, and we will cure our patients. Our search has been diligent, painstaking and systematic. But there are some cases in which the cause may not be found. What shall be done in these cases better than giving them the usual salicylates?

Since this arthritis is the product of infection, can we overcome the infection in its hidden lair by increasing the patients immunity? Schmidt and Frankel have shown that the injection of a bacterial vaccine of any kind increased the body resistance to infection in general, or in other words, we may get a heightened immunity by the use of nonspecific vaccines. Miller and Lusk of Chicago treated a rather large series of cases of arthritis by the use of nonspecific vaccines, aiming to an immunity reaction which would overcome the existing infection and abort the arthritis.

Following their work I carried out this method in a series of cases of arthritis, and our results were sometimes very striking, usually good. They were as promising as those of Miller and Lusk, who reported complete relief in 60 per cent. and improvement in the majority of the others. We used killed cultures of typhoid bacilli in doses of 250 million, 500 million and one billion. Following one of the injections, the patient, within an hour, will feel chilly or have a real chill; he may be nauseated or vomit. He may have generalized muscular aching or he may experience focal pains. In one case the injection precipitated pain in the mastoid, which we found later by the roentgen ray was the site of fairly advanced disease without symptoms.

In a case of chronic bronchitis the patient experienced chest pains and increased expectoration. This focal reaction is in every way similar to the focal reaction following tuberculin. Thus it appears that the focal reaction sometimes points out an area of disease. There is also a rise in temperature, pulse, and respiration lasting six to eight hours; after this a fall in temperature and profuse perspiration. There is a moderate disturbance in the blood pressure, which returns to normal in twenty-four to forty-eight hours.

The blood shows changes that are characteristic. These cases generally show a normal count or a slight leukocytosis with increase in the large and small lymphocytes. Following the intravenous injection for a period of five to ten hours there is a leukopenia. It seems that the leukocytes are called away from the general circulation to combat infection in some special location. After a brief leukopenia, a leukocytosis develops in which the polynuclears predominate, the lymphocytes decrease, and the eosinophils are not seen. This disappearance of eosinophils during the active stage of the disease occurs in many diseases while the battle between the invading organism and the human body is going on. The leukocytes subside, the lymphocytes are again the more numerous, and the eosinophils reappear; this entire cycle occurs within twenty-four hours.

Each intravenous injection calls forth the same reaction. Aside from this morphologic change, I have found that the blood gives a positive Widal reaction as high as one to fifty. I cannot say for how long a time this Widal reaction persists or whether this is a good method of producing a quick immunity to typhoid fever.

To summarize what has been said by the preceding speakers and what my own experience teaches, I would say that when we have to deal with cases of arthritis, myositis, myalgia, neuralgia, in a large proportion of them we will find infectious foci as causative factors. Cure will be attained by the removal of the focus. If we cannot localize the focus or cannot remove it, make the attempt of increasing the patient's immunity to the infection. This done, if the arthritis still persists, increase the patient's immunity by artificial stimulation, such as is attained by the use of vaccines. It is always well to warn the patient as to what reaction to expect so that he will not be frightened and refuse further treatment. Injection may be given after forty-eight to seventy-two hours. It must be said that neither the symptoms nor the results will be attained by the subcutaneous route. I recall one case which had been treated first by the intravenous method then subcutaneously. After a week the patient begged to get the intravenous injections as the relief had been so much greater. I have seen a large bursitis disappear over night after one injection. I have seen a large, swollen joint become painless and apparently normal in eight hours. We have in this method of treatment a useful therapeutic agent. Our problem is to learn when and how properly to use it.

Dr. Ernest Laplace, Philadelphia: When the focus is readily ascertainable by the acute symptoms, the case presents no difficulty, but if the focus is latent there is difficulty often in locating it. Only one or two micro-organisms when developing give the symptoms of inflammation; that is, pain, swelling, redness and fever. Our most virulent infections like tetanus give no focal symptoms. The infection of hydrophobia gives no local symptoms.

Now another point that we must bear in mind is that infections never retain the same degree of virulence very long; they increase or lower their virulence and accordingly will have selective affinity for some particular organ in the body where they will grow and multiply. Therefore, we must not forget the possibility of an infection because there is no pain. If there is evidence of arthritis, it is up to us to find out where there may be an infection no matter whether the symptoms are present or not in any other part of the body.

Sometimes a focus of infection may be found in the appendix giving symptoms of neurasthenia, arthritis, headache, etc., all of which may disappear after the removal of the appendix which though giving no objective symptoms may be found to contain focal secretions or be otherwise diseased.

I heard a gentleman selling vaccine here a short time ago saying to a doctor, "Here, these vaccines will enable you to make a diagnosis," and the doctor said, "Supposing I cannot make a diagnosis"; "Well, give the vaccines first and make a diagnosis afterwards." I do not think this is the proper trend of mind. If anything of that sort is to develop it will harm our cause. A great new avenue has been discovered, and a splendid work is being done on the subject, scientific work as you have heard this morning, and it is our business to walk that straight line rationally; to use all our endeavors, all the resources of the laboratories and the best research; studying the case for a month or more, if necessary, until we find out this latent focus, and having made a reasonable diagnosis, proceed to remove the cause. I must say that any enthusiasm on the subject that might lead to the indiscriminate use of bacteria, bacterins and what not, vaccines in order to make a diagnosis is to be discouraged for the present.

I will here relate a case with which Dr. Daland is acquainted, where the patient for two years had dizziness and nausea, constant headaches, and recurrent attacks of rheumatism, subacute in type, in the fingers and in the wrists, so much so that for a day at a time there was constant pain. A roentgen-ray picture showed a thickening of the roots of the wisdom tooth on the side where the neuralgia had existed so persistently resisting treatment. There was a condition of infection directly in line with what was suggested above. The patient never had a toothache; had not the slightest evidence of disease about the tooth except that thickening of the root which was discovered by the roentgen ray. The extraction of this tooth relieved all the symptoms.

The important point for us all to remember is this: That we must not exclude infection because there is no pain, swelling or fever. Infection may still be present and it is our duty to be on the alert and find it.

Dr. C. B. McAboy, Pittsburgh: Following Dr. Laplace, I would like to urge that this question of the diagnosis of focal infection is an instance where it is vastly important to have a hospital diagnosis. It is certainly beyond the experience of any one of us to be sufficiently skilled in the many different lines of investigation to make the diagnosis of focal infection in each case. We need the help of the laboratory and of men in all the different lines of medicine.

I wish to emphasize the importance of the Wassermann reaction in these cases. Of course I do not mean to say that these joints are syphilitic, but the arthritis is present because the patient's resistance is lowered by the specific infection and it is impossible to get him well without specific treatment. It has frequently been our experience that, where a focus of infection has been found and the patient does not recover after its removal, specific treatment has been instituted and recovery has occurred.

I have observed frequently in those cases which showed a leukocytosis that the leukocytosis disappeared following the removal of the focus of infection, and I have been inclined to take that as an indication that the focus of infection has been found.

It seems to me that the most favorable time for recovery is the period following the removal of the focus of infection. If one can raise the patient's level of resistance the results are frequently good, but if the patient does not submit to treatment the opportune time is missed and he may never recover. I do not think that I have ever observed a patient who had failed to take advantage of that opportunity who ultimately recovered.

Dr. J. J. Rectenwald, Pittsburgh: There is much to be learned about the dosage of vaccines. I remember one patient that went the rounds of several men giving vaccine. He had a large suppurating cavity from the hair line that extended down to his shoulder. He was treated for tubercular condition for about two years. Finally he came to me and I thought the dosage was not large enough. I then used Abbott's Polyvalent Veterinary, one ampule twice a week, and of course you know the dose used for horses is thirty times that used for men. With seven doses of the size that they use on horses he was perfectly cured. I spoke to Dr. Sherman about the large dose, and he told me "as long as you do not get any bad effects, it does not matter how big the dose is of ordinary vaccines." Now these vaccines will in certain cases work wonders. I have tried all kinds of treatments for acute polyarthritis, but the best results were obtained from bacterins, four, five or six injections, and you certainly will get surprising results. But let me warn you against giving large doses where the vital organs are diseased. I almost had a fatal result after injecting 10 minims of Sherman's No. 35. Patient, a male weighing 290 pounds, had cardiac vesicular disease, albumin and casts. He had been suffering from ethmoiditis, so I considered his nephritis of bacterial origin. The first dose of 5 minims gave a very slight chill. The second, three days later, of 10 minims was followed two hours later by a terrific chill lasting forty minutes.

He breathed 36 times a minute; heart flagging and urine was almost suppressed, terribly aggravating the nephritis. I am now satisfied with 5 minims every three days. In his case urine some days amounted to three quarts. Dropsy is disappearing; swelling in legs almost gone.

Lieut.-Col. E. R. Whitmore, Medical Corps, U. S. Army: I was interested in what Dr. Barach said about the use of vaccines in arthritis. I am interested, of course, from the laboratory man's side, rather than from the physician's side.

These requests for vaccines for treatment of various conditions are rather an important matter with us; and this is especially so in the requests for vaccine for the treatment of arthritis. Some of the men ask for large quantities of vaccine. The other day we had a request for five liters of gonococcus vaccine in 1 c.c. ampuls. We would have had to turn the entire laboratory force in on that order for a couple of days; and when we are getting out the other vaccines, that is impossible.

For that reason I have been especially interested in the nonspecific reaction in treatment with vaccines—that is, in the use of other vaccines than the one that is supposed to be causing the condition. With us, typhoid vaccine is always available; and we have urged the men to use typhoid vaccine, or any other vaccine, and to give the injections intravenously, as Dr. Barach said. Some of our men have obtained as good results from the use of typhoid vaccine as they have from a vaccine of the organism that was supposed to be causing the trouble; that is, in gonorrheal arthritis, for instance, as good results from the use of typhoid vaccine as from the use of gonococcus vaccine. So, I was very glad to hear what Dr. Barach had to say about the use of nonspecific vaccines.

Dr. Daland, closing: I fully realize that most practitioners are more interested in the treatment of the disease than in diagnosis. At the same time it is absolutely impossible to treat disease successfully without an accurate idea as to what that particular disease is in that particular patient, and therefore it is absolutely necessary that ample time be spent in the study of etiology and diagnosis.

These elemental facts are also true of vaccine treatment. I entirely agree with Dr. Laplace that one should be very slow in resorting to vaccine treatment for polyarthritis, secondary to focal sepsis. The real treatment consists in the removal of the cause, which will be followed by the disappearance of the polyarthritis. If, therefore, you fail to diagnose a latent focus of infection causing polyarthritis, you likewise fail to secure recovery.

There is one other point that impresses my mind very strongly, and that is that most of us are inclined to delay a complete and thorough clinical investigation. For example, in a case of acute polyarthritis, where the focus of infection has been removed, we think that because the local phenomenon has disappeared, we of necessity have discovered the cause, and the patient is safe. As a matter of fact, in those cases of multiple septic foci, where there may be two or more foci in the roots of different teeth, and an additional focus in the tonsil, the removal of the dental foci is frequently followed by the disappearance of the arthritis, which subsequently recurs. That same individual may develop a cholecystitis, as well as polyarthritis, and the removal of the tonsillar focus is followed by complete restoration to health. Therefore remember that when multiple foci exist, you may observe a temporary recovery, even though one focus of infection remains undiscovered.

A very interesting example of what I am trying to convey of the difficulty of deducing that we have been successful in removing all foci because symptoms improve, occurred in a case where a tonsillectomy was performed twelve years ago. The supposition was that both tonsils had been completely removed. Nearly two years ago he began suffering with polyarthritis. A dental latent focus of infection was discovered and treated by the dentist, who afterward stated that the patient was well. Nine months later an acute cholecystitis occurred. The tooth that had been treated and was supposed to be noninfected was extracted, the pulp count contained putrescent material and culture showed the *Streptococcus viridans.* Eight months later there was a sudden, complete and total facial paralysis without apparent cause. A regoing over of all of the evidence excluded oral and other septic foci, and examination of the throat by three skilled laryngologists ultimately disclosed a small remnant of one tonsil which, when removed, proved to be infectious. It was impossible, because of certain conditions present, promptly to perform this operation. During the two months that elapsed before removing the remnant of tonsil the facial paralysis steadily improved. In this case the tonsillar focus of infection remained local for an unknown length of time, and intermittently produced systemic effects by absorption of toxins or streptococci. It is probable that a partial immunity was established. When this immunity or resistance was lowered from any cause, systemic invasion occurred.

I believe that in the midst of a study of so complicated a question as the diagnosis of latent foci of infection, we should not inject vaccines. It seems to me that it is very much like injecting morphin in an obscure abdominal disease before making a diagnosis. It seems to me that the polyvalent vaccine resembles the "shotgun" prescription. When the septic focus is removed the injury sustained by the joint structures which interfere with function requires local treatment. Occasionally a secondary septic focus exists in the anatomical structure forming the joint.

We should attempt to differentiate between the systemic result of the absorption of toxins versus the entrance into the circulation of septic emboli. I believe these two factors may occur independently or coincidently. I believe the rapid relief of pain in chronic arthritis observed after removal of a septic focus may best be explained by the rapid disappearance of toxemia. If the pain was inflammatory, due to septic emboli, one could not expect such a marked improvement to take place in four, six, eight or ten hours, when the disease had existed for a number of weeks or longer.

THE DEVELOPMENT OF NEPHRITIS*

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There are few problems in medicine in which the clinician and laboratory worker have developed such a conjoined interest as in the study of nephritis. The cooperation, which the various forces in the medical sciences have demonstrated for the elucidation of this disease, has been forced upon them through the difficulties of gaining a clear understanding by approaching the subject through one avenue alone. The multitudinous investigations upon nephritis by individual investigators making observations and adding facts to the already overburdened literature in attempting to lay bare the secrets underlying the causation and nature of what we commonly speak of as chronic Bright's disease, has led each to the common conclusion that, without the correlation of others in their particular fields of research, a happy conclusion could not be reached. It would seem a late date for all of us to accept this verdict when so much hope and optimism have often been expressed in the studies for the interpretation of renal pathology. Richard Bright, although opening the way for an understanding of the relation of kidney disease to systemic disturbances, himself appreciated the difficulties of a thorough understanding and was dubious as to the meaning of the few observations he had made upon the kidney structure. From that time on, controversy has raged over each new point which had been brought forward by a new investigator, and so through decades of time we find that successively the clinician, the physiologist, the pathologist, the biochemist, and the bacteriologist have handed over the problem to the next until today in making a more appreciative retrospect of the work done by each we are again calling upon the resources of all, to combine in a supreme effort of mastering the difficult study, with the hope that the outcome of the conjoined efforts will point the road for the amelioration of a disease which appears to be on the increase in severity and frequency.

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* From the Pathological Laboratories, University of Pittsburgh.

* Read by title before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

You will note that I am placing particular attention upon chronic Bright's disease, rather than the still broader problem of nephritis. Chronic Bright's disease in its various forms is of particular and peculiar importance and, for study, must be considered in quite a separate light from the acute Bright's disease with which every clinician is familiar in its occurrence in acute infections, acute intoxications and poisonings. In the majority of instances, acute Bright's disease has a definite concurrent factor which we are able to recognize and towards which we can point with some certainty as to the etiological factor. It is true that in a fair number of instances the exact nature of the exciting cause in acute Bright's disease cannot be indicated because of the lack of knowledge as to materies morbi of the primary disease. Such is the case in the acute Bright's disease associated with scarlet fever, measles, smallpox and others. But experience has taught us that there is the underlying factor in bringing about damage to the kidney. We have also come to learn that these acute renal conditions are, for the most part, transient, the acute stage being of relatively short duration and when recovery takes place there often remains no serious systemic manifestation indicating renal incompetency. The case then disappears from our observation to reappear only too frequently at some distant date with a more or less advanced chronic renal disease, particularly evident by the clinical symptoms which have brought the patient to the physician. Of course, it is more than likely that other causative factors have had their influence upon the kidney and that the initial infection or intoxication was not solely responsible for the final state of chronic Bright's disease.

We must recognize also that there are many instances of chronic Bright's disease in which no evidence of an initial acute attack is available from the patient. He has had and safely passed through his attack of acute renal affection without evidence of it, recognizable either by him or his physician. In fact, the great majority of patients with chronic nephritis are ignorant of the time when the onset occurred. Here again it would seem that these patients had not suffered an intense acute nephritis of which the chronic stage is a remnant, but rather that they have been the subjects of repeated mild insults of which the chronic disease is the accumulated evidence.

Under these circumstances it is difficult to point to any one or more factors as being the cause. How futile is the morphological study of the advanced lesions in the kidney in an attempt to demonstrate the ways and means whereby the kidney was brought into its incapacity. Viewing the lesions in any individual kidney showing some form of chronic Bright's disease gives no definite points which would permit us to make conclusions as to the length of time of the disease, the nature of the causative agent or the extent of the functional incompetency exhibited during life. Beginning with the work of Ernst and then of Councilman, not a few investigators studied the pathological changes in the kidney in association with a carefully analyzed history, particularly dealing with the nature of the disease leading to death. These studies coordinated our view so that the important factors arising in the patient's life were borne in mind when the kidneys were examined. Through the great number of studies that were made in this manner the histological topography of the kidney under conditions of disease is today well delineated. Although such a coordination of clinical and pathological studies have enthusiastically been made, they have up to the present assisted little or not at all in harmoniously including the results of the biological chemist. The studies upon renal excretion in which the ability of the organ for handling endogenous and exogenous products has been determined, although offering much general information upon the competency of the renal tissues to carry on their work, have not permitted a satisfactory interpretation of the actual kidney change which was the true underlying reason for the incompetence. Thus, up to the present, the chemical analysis of the urine does not determine the actual kidney lesion. This fact in no way minimizes the value of functional tests in that much can be learned by these means of the capacity of the kidney for handling certain definite substances.

Of late, pathologists have interested themselves, particularly in the hope of finding the agent or agents which most commonly act upon the kidney substance in a harmful manner. We are of course aware that certain poisons, particularly those of the heavy metals as well as the toxins of certain bacteria, when introduced into the body in sufficiently large quantities will act upon the renal tissues and rapidly destroy their function. These intense intoxications have their particular effect upon the epithelium of the tubules of the cortex. The convoluted tubules suffer mostly. These lesions whether induced in man or animals are of immediate importance in greatly interfering with the function of excretion. They constitute what we ordinarily speak of as nephritis. There has been a considerable discussion as to whether the term has been properly used, for under these conditions an inflammatory reaction is almost always wanting. The damage in the kidney is of a degenerative character and is proportionate to the intensity of the intoxication. Granted that the lesion is not too severe and the animal survives, complete repair takes place and the kidney is restored to its normal characters, without leaving a mark which may subsequently be recognized. As, however, in many instances the intoxication bringing about tubular degeneration is accompanied by a bacterial invasion, an inflammatory process of greater or less extent also occupies the glomeruli and the interstitial tissue. It is with the presence of true inflammation that our greatest concern attaches itself as to the outcome of the kidney damage in the future history of the patient.

The importance of the combined action of poison and bacterial infection is well demonstrated in the experiments of O'Hare. He was able to produce chronic kidney lesions in rabbits by the simultaneous injection of uranium nitrate and colon bacilli. Uranium salts have been extensively used to induce tubular degeneration, although it has also been found that when the uranium had been given over a long period of time, connective tissue reactions were observed in the glomeruli and in the stroma between the tubules. O'Hare observed that when *B. coli* were injected at the time when parenchymatous damage was induced by the uranium, the connective tissue response was much more marked.

The recent studies upon the kidney, in health and disease, have shown that it is not possible to take individual structures of the kidney and deal with them separately in our discussions as if they were so many parts of a mechanical toy, but that the tubules, glomeruli, blood vessels and lymphatics have such a close relation to each other that lesions affecting one group have a serious effect upon one or more of the others. Thus we are now brought to appreciate that what was currently spoken of as chronic parenchymatous nephritis was in truth not a primary parenchymatous disease, but a glomerular one. It is because of the character of the vascular distribution among the glomeruli and the tubules that an impediment to the blood flow through the glomeruli leads to an altered blood supply to the tubules with their subsequent degeneration. Similarly we find that when the renal vessels of larger caliber are involved in scleroses, the kidney substance suffers nutritional changes to a degree depending upon the extent of the narrowing of the arterial lumen. These so-called arteriosclerotic kidneys are best not considered under nephritis inasmuch as the lesions of their substance are nutritional atrophies resembling slowly induced infarcts.

Then if we have ruled out of the consideration of "pathological" nephritis parenchymatous degenerations and arteriosclerotic atrophies of the kidney, what have we remaining for discussion? There remains true nephritis, that form of kidney lesion in which we have the ear-marks of either acute nephritis with exudate or proliferation, or chronic nephritis with repair by fibrosis. It is not necessary for me to go into the discussion of the particular disposition of the inflammatory reaction in the kidney, except to say that they are most frequently found in the glomeruli, about the small blood vessels or following the lymphatic channels. The type of the inflammatory reaction which leads to the small contracted kidney is fairly constant, being non-suppurative and having a distribution between the tubules and along the small arterioles. This is also true of the glomerulo-nephritis save that a type of proliferative lesion is also to be recognized. In these types of the disease there is no mistaking the inflammatory characters, and by the appearance we are continually reminded of similar lesions encountered in other organs. The greatest similarity is observed in the focal inflammatory deposits in the heart muscle in acute rheumatic fever, and it is particularly in this disease that we may observe the triple attack upon heart, kidney and arteries by a non-suppurative inflammation, identical in its characters and in all probability produced by a common agent, a member of the streptococcus group. We have had an opportunity of studying a series of cases of rheumatic fever in the acute, recurrent and chronic states. Where the acute condition is present in the patient in its first or recurrent attack, the streptococcus is disseminated by the blood to various tissues and of these the heart, kidney and arteries are most prone to suffer.

Other bacteria have also been shown to bear an importance to the inflammatory lesions arising in the kidneys. The *B. coli*, *B. mucosus capsulatus*, and the pneumococcus have all been isolated from the urine or kidney of patients showing more or less renal disturbance. The bacteria also have been used in experiments to induce varying grades of nephritis in animals. The toxin of the *B. diphtheriæ* causes a sharp tubular degeneration when given in large doses, while in smaller amounts a milder process of degeneration is accompanied by glomerular response of an inflammatory kind.

The *Streptococcus viridans* group of micro-organisms is above all the most important organism in man which localizes in the kidney to give rise to a true inflammatory lesion, and it is this organism which has been shown to possess a persistency of attack as well as a tendency for recurrence. This streptococcus is recognized as the important micro-organism in inflammatory heart lesions, its presence in acute rheumatic fever is known, and its tendency to invade the tissues under conditions of temporary metabolic or parasitic disturbances is also well appreciated. The vagaries of infection by members of the *Streptococcus viridans* do not permit us to give a general formula whereby we may clinically recognize the presence of these bacteria. They are often found when least expected, or again, we are unable to demonstrate them or any other organism, when we are convinced of their presence. The infection gains entrance so commonly by portals in the mouth that, in the absence of a distinct macroscopic focus in the tonsils or at the root of the teeth, we fail to recognize that the lesion of entry may be microscopic or in regions inaccessible to the eye. The intestinal tract harbors this group of streptococci, and no doubt is often the region from which a systemic dissemination takes place.

Hence, because of the difficulty in localizing the place and mode of entry for this infection, it is difficult and at most times impossible to trace each step of the bacterial attack in any given case. We have, however, ample evidence in cases of infectious endocardial disease (streptococcus) that the kidney is simultaneously involved. Under these conditions we have a distinct type of kidney lesion, a glomerulonephritis. It has been shown by Gaskell, Ophüls, Baehr and others that the glomeruli are particularly picked out because of the manner in which the bacteria reach them. The micro-organisms form small embolic masses which lodge in the glomerular tufts and occlude them in part or in whole. The glomeruli are infarcted and depending upon the extent of the involvement show degeneration of various grades of severity. Inflammation accompanies the glomerular lesion; at times this is acute with leukocytic infiltration, but more commonly lymphocytes are the predominant cell of the lesion in the human kidney. However, although our attention is chiefly attracted to the glomerular lesions and in cases of heart disease the peculiar embolic process gives one the impression that the *Streptococcus viridans* has a distinctive renal reaction in the glomerulus, we must not lose sight of the fact that these bacteria may make their appearance in the kidney under many other conditions than endocarditis and that the organisms arrive in the kidney in varying numbers and virulence. Our animal experiments have convinced us that when streptococci are injected intravenously they do not necessarily form embolic masses which localize in the glomeruli alone, but may be disseminated in numbers too small to occlude the capillary loops. Individual inoculations may have little effect, but when repeated at short intervals over months of time, renal infection takes place. Such treated animals also develop heart and joint lesions. The kidney affection may be glomerular, pericapsular, between the tubules or along the lymphatics which follow the blood vessels in the interlobular zones. The pathological process is of the nature of a non-suppurative inflammation, and may be quite diffuse. With the persistence of the inflammation, fibrosis is the outcome, and depending upon the particular tissues which were most severely involved, we obtain that varying picture, in the distribution of the connective tissue which is so familiar in the character of chronic interstitial nephritis. Ophüls has recently discussed this problem and with him we fully concur. He has recognized in the human cases of true nephritis an acute, subacute and chronic type of the disease. He furthermore recognizes a varying distribution of the inflammatory reaction in the kidney cortex, thus giving a somewhat different histological appearance in the different cases, but most important of all he indicated that all of these grades of intensity and variation in the disposition of the reaction may be the effect of particular micro-organisms.

It is an important finding that infection by the members of the *Streptococcus viridans* group of micro-organisms does not confer immunity; in fact, it appears from a study of human cases and has been shown in experiment that such infections induce a greater susceptibility of the tissues attacked. Thus early and mild infections tend to lower tissue resistance and invite recurrence. Repeated lodgment in the kidney and other tissues by these streptococci is probably available in most individuals, but particularly in those with local foci of infection in the mouth, intestine, prostate and elsewhere. The damage induced at any one time when bacteria are liberated into the blood stream is not great, and the evidence that the bacteria have caused a focal inflammation in the kidney is not sufficient to attract our attention by the clinical manifestations, but when these repeated insults have each left their mark upon the kidney structure, there arrives a time when the accumulated damage greatly alters the function of the kidney and leads to incompetence. The progressive deposit of inflammatory tissue in the renal cortex has its serious influence, in rendering less active the tubules and the glomeruli. Together with this the fibrosis in and about the vascular channels also materially affects the nutrition of the kidney structure. It is thus late in the actual history of the renal lesion that the patient is confronted by an incompetence which results not alone from damage in one particular structure in the kidney, but in several. From a pathologist's point of view the type of kidney disease in which the glomeruli are chiefly picked out is but a type of lesion which may be induced by the same agent as that which causes the diffuse interstitial, the pericapsular or the periarterial lesion. In the former instance the character of the bacterial distribution (bacterial emboli) is such that a mechanical factor of interfering with the proper glomerular circulation introduces a condition having an influence over and above that brought about by the presence of living micro-organisms. Where the localization of the bacteria is not particularly glomerular, the specific reaction of the tissues to the bacteria becomes more evident. We are of the opinion that bacteria, and particularly those types of streptococci which induce non-suppurative inflammations are the most important agents in inducing chronic interstitial nephritis in its different forms.

1720 Wallingford Street.

Fish bones can be removed from the throat by giving from four to six ounces of milk, and forty minutes later an emetic dose of sulphate of zinc. The coagulated milk carries the bone out with it.—*General Practitioner.*

TESTS FOR THE MEASUREMENT OF RENAL EFFICIENCY IN RELATION TO PROGNOSIS IN NEPHRITIS *

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In the patient with probable nephritis there are three important questions to answer: Diagnosis, is there actually a nephritis present? Prognosis, how will the disease progress, how long will ordinary activities of life be possible, how long will the patient live? Treatment, what diet and what drugs are to be used to obtain the maximum of activity, comfort and length of life? At the present time I shall confine my attention to one of these questions, prognosis.

The shrewd clinician after a general examination of the patient on the basis of his extensive experience often can form a very correct idea as to prognosis in a given case of nephritis and yet all of us are conscious of numerous errors on this score. As illustrating how wide of the mark an excellent consultant may go, I know of an instance where a case seen by two of the best consultants of this state some forty odd years ago was diagnosed as chronic nephritis and the patient's friends were told she might live six months. She had symptoms and signs of chronic nephritis during a period of nearly thirty years and died in uremia. The diagnosis was correct; the prognosis was wrong by about half a life time.

Has recent work improved our prognostic powers in cases of nephritis? I feel that of this there is no doubt. Methods of quantitating renal function have afforded us considerable data not previously available as a basis of judgment as to prognosis and they have given us a far better insight into the disease, nephritis.

Many of the methods of testing renal function yield results which are expressed numerically. Such numerical values make easy a comparison from time to time of renal function in the same patient or of renal function in different patients. The ease, however, of such comparisons constitutes a danger, for the observer is tempted to draw conclusions from his figures without giving due attention to numerous extrarenal factors in the patient perhaps difficult to evaluate. The very great importance of considering the patient as a whole cannot be emphasized too strongly, particularly in determining probable prognosis.

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* From the Medical Clinic of the Peter Bent Brigham Hospital.

* Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

Some extrarenal factors influence renal function profoundly; for example, severe anemia or cardiac decompensation. Under such conditions some functional tests may give results indicating advanced nephritis and yet the kidney itself is structurally essentially sound. Prognosis in such cases depends on the type and severity of the anemia or on the character of the cardiac lesion and renal function may be an unimportant factor in the prognosis.

It must be kept clearly in mind that methods of testing renal function measure the functional activity of the kidney at that time. If renal function is depressed we must determine from a thorough examination of the patient whether the decreased function comes from a pathological process within the kidney or from an extrarenal disturbance in the patient before we are justified in drawing any conclusions from them as to prognosis. If these extrarenal disturbances change, either get better or get worse, renal function probably will change, but prognosis depends more on the character of the extrarenal disturbance than on the renal function. The very fact of change in renal function with change in extrarenal conditions, particularly when that change is in the direction of improvement, is an indication that the kidney itself is structurally in good condition.

On the other hand, if renal function as measured by our tests is poor and the patient's condition indicates no serious disturbance in any other organ than his kidneys, the probability of any great improvement in renal function is slight, except in cases of acute nephritis. In such patients with chronic nephritis prognosis can be determined with far greater success from tests for renal function than in those with extensive extrarenal disturbances.

That tests for renal function show a decreased renal activity does not justify the diagnosis of nephritis. Extrarenal factors must be excluded or given their proportionate value in the symptom complex before conclusions as to renal lesions are justified. Used in this way the tests help greatly in the diagnosis of nephritis. When nephritis is present the tests measure renal activity, and when there are no extrarenal factors, prognosis in chronic nephritis based on tests for renal function shows relatively few mistakes in those patients in whom renal function is quite low.

When renal function is fairly good the chance of prognostic errors is greater. In such a case if we can exclude extrarenal factors we are justified in saying that a very considerable change in renal lesion must take place before the outlook is serious. For a satisfactory judgment as to prognosis, however, we must have an idea as to the probable rate of progression of the renal lesion. This varies much in different patients. Repetition of tests of renal function at intervals gives us some idea of the rate of progress in the renal lesion, and repeated tests are of great importance in prognosis.

Here, however, we are confronted with another difficulty. There are two pretty distinct groups of nephritics; in one the lesion progresses at a pretty steady rate, in some rapidly and in others slowly; in the other group progression seems to be largely by sudden exacerbations, often caused by infections, with intervals of relatively little progression. Obviously this last group even with repeated tests, cannot be predicted about with safety. When from the history or from observation of the case this type is recognized a far more guarded prognosis must be given than in the former type.

Numerous tests of renal function have been described, but I will discuss only a few which we have found of much practical help in our study of nephritics at the Peter Bent Brigham Hospital. In selecting these, in addition to the kind of information needed in regard to the patient, we had two factors in view, simplicity in making the tests and the comfort and convenience of the patient. These tests are quite satisfactory and on the whole are decidedly the best of a fairly large series we have tried.

We now use four tests, but not necessarily all four on each patient. Sometimes it is not possible to use them all on account of conditions in the patient; for example, an incontinent patient is not suited for tests dependent on accurate collections of urine specimens or a nauseated patient cannot be given a test depending on the eating of a fixed, fairly hearty diet. One test shows variations only in patients with slight disturbances of renal function; another test shows no change until renal lesion is fairly advanced. These and other factors influence us in selecting the tests to be used.

The four tests which we are using are: (1) Phenolsulphonephthalein elimination. (2) Determination of the blood urea and the rate of urea excretion (Ambard coefficient or McLean index). (3) Determination of specific gravity, sodium chlorid and nitrogen content of the urine collected in two-hour portions during the day with the patient on a special diet (two-hour test).[1] At night one ten-hour specimen is collected and analyzed. In this test a comparison of the day twelve hour amount with the night twelve hour amount is of value. (4) The amount of diuresis produced by such a diuretic as theophyllin.

Our usual procedure is to give soon after admission a 'phthalein test if the patient is not incontinent or in coma. If incontinent or in coma a blood specimen is taken for the determination of the urea. If incontinent or in coma the urea determination is the only test which is really practicable. It serves to distinguish between advanced renal disturbances and those of slight degree. If the blood urea is not increased considerably the kidney can be excluded as a cause of the coma or other serious symptoms, and prognosis depends on the existing extrarenal disturbances. If it is increased markedly in amount prognosis is very bad on account of the renal condition.

If the patient is in satisfactory condition for the 'phthalein test this serves to group the nephritics preliminarily into mild, medium and severe. In the mild cases 'phthalein excretion is normal or slightly depressed. In them blood urea is normal or almost normal in value unless the patient is on a high proteid diet, and it alone is not likely to yield much information in addition to that from the 'phthalein test. It, however, serves as a check on the 'phthalein test. The Ambard coefficient or McLean index in such cases is sometimes normal; often it shows departures from normal that help in making a prognosis.

In these mild cases the two-hour test is particularly useful, so our ordinary procedure is to put that patient if he shows a good 'phthalein elimination on a preliminary standardizing diet for two days containing 75 grams of protein and 4 grams of sodium chlorid and on the third day give the special meals and make the urinary collections of the two-hour test. During this day we usually get blood and urine for the Ambard coefficient or McLean index. The degree of fixation in the curves of excretion of solids, nitrogen and sodium chlorid and the relations of day and night urine serve to differentiate degrees of involvement among these patients with mild nephritis. Particularly useful is this test in determining the relative importance of the renal lesion in patients with arterial hypertension and good cardiac function.

The preliminary using of the 'phthalein test prevents giving test diets relatively high in proteid to a patient with poor renal excretion. In such I have seen untoward results from the high protein feeding.

If the preliminary 'phthalein test shows an excretion of 35 per cent. to 45 per cent. we regard the patient as having a moderate degree of renal disturbance due either to intrarenal or extrarenal lesions. In such usually the two-hour test is of very little help in differentiating degrees of involvement, and so it is hardly worth using. If you do decide to use it, the diet will do no harm in such patients. The blood urea determination is of value, but it is more helpful when used in conjunction with the determination of the Ambard coefficient or McLean index as an expression of the excretory relation between urinary urea and that in the blood, and it is in this connection we use it most often.

A good many patients in this group of medium cases have cardiac disturbances and edema. If the edema is slight and digitalis promptly removes it, there is excellent evidence that renal function is good and prognosis must be determined rather from a consideration of the cardiac condition. If edema is marked and in combination with digitalis a diuretic such as theophyllin produces a prompt diuresis, renal function is good; if not, renal function is poor and prognosis proportionately worse. In such the response to a diuretic serves as a test of renal function.

If the 'phthalein is below 35 per cent. renal function is poor, and in patients without cardiac decompensation this indicates usually severe renal lesions. The drop in 'phthalein excretion down until finally none is excreted indicates an ever increasingly bad prognosis. Ambard coefficient or McLean index usually parallels the

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[1] In this test at first we used a diet modified slightly from that used by Schlayer and Hedinger (Deutsch. Arch. f. klin. Med., 1914, CXIV, 120). This is described in the Am. Jour. of Med. Sciences (see Studies of Nephritis, Christian, Frothingham, O'Hare and Woods, Am. Jour. of Med. Sciences, 1915, CL, 657). This diet was not palatable for our average patient and so at present we are using a somewhat different diet as follows:

Morning meal: Orange 50 grams, oatmeal 150 grams and milk 25 c.c.; 1 egg 50 grams, toast 20 grams and butter 5 grams, sugar 10 grams and cream 20 c.c., to be used with 150 c.c. of tea or coffee.

Mid-day meal: Milk (in soup) 150 c.c., steak 75 grams, potato 100 grams and butter 10 grams; peas 100 grams and butter 10 grams; bread 20 grams and butter 5 grams; ice cream, composed of milk 100 c.c., cream 20 c.c., sugar 10 grams and 1 egg 50 grams, sugar 10 grams, NaCl 3.5 grams (to be used by patient on above food) and water 500 c.c. with meal.

Evening meal: Tomatoes 75 grams and butter 10 grams, lettuce 20 grams with celery 50 grams and olive oil 20 c.c., bread 20 grams and butter 5 grams, baked apple 100 grams with sugar 20 grams and cream 20 c.c., water 500 c.c. with meal. 250 c.c. water during evening.

This diet is similar to one used by Mosenthal (Arch. of Int. Med., 1915, XVI, 733) in a modification of the Schlayer and Hedinger test. Rather wide variations in diets would give very similar results in the sense of showing a departure from the normal curves of excretion when the kidney is diseased. It is well to emphasize this, as the idea that the test is only possible when a very definite diet is used might prevent many from applying the test. Very good results can be obtained with patients on average normal diets in which the noon-day meal contains the largest amount of proteid and sodium chlorid.

'phthalein excretion. After the 'phthalein excretion reaches a very low value determinations of blood urea are of value, for, as they continue to rise they indicate a nearer and nearer approach to uremia, a condition which may not appear in some cases for many months after 'phthalein excretion has become and remained practically nil.

If with the low 'phthalein output the patient is edematous the renal lesion may be extensive or slight. If slight, response to a diuretic is good, and the patient so far as renal lesion is concerned has a good prognosis; in such cases edema is chiefly of circulatory origin and the patient's lease of life depends on his cardiac condition. If there is no response to the diuretic ordinarily the edema is of renal origin and indicates extensive renal impairment, and prognosis depends largely on the condition of renal function as determined by 'phthalein elimination, blood urea determinations and the excretory relations of urea as expressed by the Ambard coefficient or McLean index. In most patients of this latter group prognosis is quite bad, unless the renal lesion is acute instead of chronic in type.

Another factor which causes mistakes in prognosis in patients with chronic nephritis, even after careful tests of renal function, lies in what might be called the liability of nephritics to accidents. A large percentage of patients with chronic nephritis have arterial hypertension or arteriosclerosis or both. They are liable to cerebral hemorrhage or to angina pectoris. The occurrence of such a development cannot be predicted from tests of renal function; they may occur in those with excellent renal function, but if they occur they are likely to cut short the patient's life and lead to a mistake in prognosis. The mistake, however, is not to be charged against the tests for renal function; the tests have given us only a prognosis as to renal condition, a prognosis necessarily partial in all patients with hypertension or arteriosclerosis.

Again many chronic nephritics sooner or later develop cardiac insufficiency and die eventually from cardiac decompensation. Their length of life cannot be predicted from renal function alone, but prognosis must depend on a proper evaluation of renal and cardiac condition. At the moment, however, renal tests give us valuable information as to renal function that helps much in our method of treating these cases as well as allowing us from a consideration of both renal and circulatory condition to form a far better idea of prognosis than we could did we not have a measure of renal efficiency.

SUMMARY

Tests of renal function give us additional facts on which to base a prognosis as to renal lesions. They will, if used with such limitations as are indicated above, greatly improve prognosis, but they will only reduce, not eliminate, our mistakes in prognosis. Too many factors play a part in the human organism to permit of perfection in prognosis. Properly used tests of renal function aid us much in the management of nephritic patients. Often they enable us to detect a serious condition not previously suspected. Frequently they enable us to bring to our patients a far more cheerful outlook than seemed justified from the data obtained by other methods of examining the patient. In our experience we have found these tests of renal function of great value.

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THE CLASSIFICATION AND TREATMENT OF THE NEPHRITIDES*

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I. INTRODUCTION

When we discuss so important and practical a question as the classification and treatment of the nephritides we can hope to make progress only as we come to be of one mind regarding the principles which should guide us, because for the treatment of nephritis, if you are familiar with its history, everything has been suggested. There were times when we used hot irons upon the back; and, in more recent days, prayer has been proposed to overcome the serious signs and symptoms that frequently arise in the course of this clinical entity. If we are going to choose between such extremes or find a middle course, it behooves us, first of all, to ask ourselves what is really the nature of the changes that occur in the kidney and elsewhere in the body; and only as we arrive at a logical conclusion regarding the nature of these changes, can we hope to make any advance and to agree upon the question of treatment.

Our discussion will, I think, demonstrate that the problem of nephritis is in good part only a subheading of a larger problem in medicine, namely, that of edema; and this problem of edema, so much discussed in medical circles, is in its turn but a subheading of a still greater problem with which the medical man has concerned himself but little. This is the physiological question, so much argued by plant and animal physiologists, which asks why a cell or group of cells in a plant or animal holds any water at all, and why the amount thus held under normal circumstances (as is the case, for months and years even, in our bodies) is so constant.

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* Abstract of the paper read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917, as printed in the Journal-Lancet.

II. CRITICISM OF THE OSMOTIC THEORY OF WATER ABSORPTION

I shall not burden you with a recitation of the many hypotheses which have been proposed to explain this fundamental problem. They are all of them so inadequate that their inadequacies are admitted even by the proponents of these hypotheses. Let me merely illustrate the matter by touching upon the most important and most heralded of them, namely, the osmotic theory. According to this theory, our cells are surrounded by a so-called semipermeable membrane, which by definition is one that is permeable to a solvent (water, in the case of the human body), but impermeable to all dissolved substances.

Suppose we grant this assumption in the case of any cell, or any group of cells composing an organ, or for the whole body. Then, depending upon the changes in the concentration of dissolved materials within and without a cell, an organ, or the whole body, water will move into or out of these, depending upon the amount of the differences in concentration, and always from a region of low concentration toward that of the higher concentration of the dissolved substances. Such differences in concentration, therefore, serve to make possible a movement of water into and out of cells. But this is true only as long as the cells are surrounded by semipermeable membranes which hold the dissolved substances in their places.

Biologically, however, this conception of the cell is impossible, for were our cells surrounded by such semipermeable membranes, our food substances and oxygen could never get into them, and the products of cell metabolism like urea, carbon dioxid, etc., could never get out. Obviously, if our cells are to live, both these things must be continuously possible.

To get around these difficulties, the proponents of the osmotic theory have made the membranes, supposed to exist about the cells, partially permeable. But as soon as this is done, concentration differences within and without the cell can no longer come to pass, for the diffusion of the dissolved substances from regions of higher concentration to regions of lower will immediately wipe out such inequalities. The concentration differences necessary to move the water will, therefore, no longer come to pass. And yet, physiologically, water must at all times be able to pass into and out of cells.

As is readily apparent, therefore, the adherents of the osmotic hypothesis can take their choice. They can have semipermeable membranes around their cells, and so make concentration differences move the water into and out of them, but no food, no oxygen, and no metabolic products; or they can dispense with these membranes, and so get dissolved substances into and out of the cells, but no water. Physiologically, however, it must be possible for both these things to happen; and without interruption. No theory which encounters difficulties in any of these directions can ultimately survive.

III. THE COLLOID THEORY OF WATER ABSORPTION

In casting about for elements which might be used for a better understanding of the laws of the absorption and secretion of water—and of dissolved substances—as observed in the human body under physiological and pathological circumstances, we investigated the properties of the colloids—the very substances which on the osmotic hypothesis are cast aside as of little or no importance. A study of the colloids has shown that these not only play a rôle in the general problem of absorption and secretion, but that they play the dominant one, determining, not only how much water and dissolved substances a cell, tissue, or the whole body may hold under normal circumstances, but also how much it will hold in various pathological states.

We shall devote chief attention today to the problem of the absorption and secretion of *water*.

In order to illustrate the laws governing this and their biological significance, allow me to call your attention to the behavior of the protein colloids when subjected to different external conditions, so far as their properties of water absorption and secretion are concerned.

I show you here a set of test tubes of uniform diameter, into each of which has been introduced the same weight of a dry protein, namely, fibrin. Let us see how the protein behaves when different kinds of solutions are poured upon it. If the unit weight of fibrin is thrown into water it swells somewhat; but if the same amount is placed in a test tube containing a very dilute acid, it swells very much more. Instead of absorbing, for example, some five or six times its weight of water, it may, in the acid, be made to absorb some twenty, thirty, or even forty times its weight. If the acid is neutralized through the addition of an alkali, the absorbed water is again given off, while the fibrin shrinks. Water absorption is followed by water secretion—in other words, the process is reversible. Let me add that all acids behave in this way. Generally speaking, the swelling is the greater the higher the concentration of the acid, though with the so-called "strong" acids a concentration is finally reached beyond which further addition of acid does not increase, but decreases, the amount of water absorbed.

Let me show you next another set of tubes. All these tubes contain the same concentration of an acid. The first contains pure acid only; to all the rest have been added progressively greater amounts of a salt (sodium chlorid). You observe that the addition of the salt has reduced the amount of swelling in all the tubes, and that the greater the concentration of the added salt, the greater the amount of this reduction. Observe, too, that we have added to the acid a *neutral salt*. The effect, you see, is, therefore, not merely due to a neutralization of the acid. In other words, even though we have practically the same acid concentration in all the tubes, we have produced more and more dehydration of the protein as we have increased the concentration of the salt. This extremely interesting antagonism between acids and neutral salts is of the greatest physiological and pathological importance.

Let me now call your attention to a third set of tubes. In this set, a constant weight of fibrin has again been introduced into a definite concentration of an acid, but to the acid there has been added this time the same concentration of *different* salts. When the effects of a series of sodium salts are thus compared it is found that they all again reduce the swelling, but in very different degrees. The chlorid of sodium, for instance, produces the least dehydration; the bromid and nitrate are somewhat more powerful; the acetate occupies a middle position; most powerful are the sulphate, tartrate and citrate. If we compare the dehydrating effects of a set of salts which have a common acid (a set of chlorids, for example), we find that ammonium, potassium, and sodium salts are less active in producing dehydration than magnesium or calcium, and these last are less effective than copper, iron, or mercury.

You may be inclined to say at this point that these academic tables are of no interest to you in your problems of practical medicine. Let me emphasize, therefore, that they are. As a matter of fact, every good doctor has worked empirically with these facts for decades. What we call the saline cathartics are nothing more than those salts which, without being particularly poisonous, are peculiarly powerful in bringing about a dehydration of protein colloids. The cathartic salts diffuse into the intestinal wall, dehydrate it, and the squeezed off water then keeps the intestinal contents liquid. Franz Hofmeister (in somewhat different terms) pointed this out many years ago, and, while many have grown famous opposing his fundamental suggestions, we are destined shortly to return to his views.

With the facts just discussed in mind, you see at once why sodium chlorid, sodium bromid, sodium iodid, etc., are not ordinarily used as saline cathartics. They are salts which, when introduced into the gastro-intestinal tract, diffuse into the mucous membrane of the intestines; but, since they do not produce much dehydration, except in high concentration, they are not likely to produce the fluid stools characteristic of an effective catharsis. On the other hand, sodium phosphate and sodium citrate, even in low concentrations, are powerful dehydrators of protein colloids, are our standard saline cathartics. Since magnesium is a better dehydrator than sodium or potassium, magnesium sulphate and magnesium citrate are more powerful cathartics than the corresponding sodium or potassium salts, and the older doctors knew and worked with this fact long before the reason for it was understood. The tremendous dehydrating effects of mercury are taken advantage of in everyday practice when we use calomel for cathartic purposes. Even though this salt is practically insoluble, still those trifling amounts which do dissolve produce the tremendous dehydration which we observe after an effective dose of this drug.

IV. THE ANALOGY BETWEEN THE ABSORPTION OF WATER BY PROTEIN COLLOIDS AND BY TISSUES

I have detailed now a series of test-tube experiments which we may apply with entire safety to the problems of water absorption and secretion as observed in the body. Not only qualitatively but quantitatively, as well, *every cell, tissue and organ in such a complicated body as our own, in fact the body as a whole, behaves in the same fashion as do the fragments of protein colloid in these test-tubes.* Thus, muscle, eyes, brain, liver, kidney, etc., swell more in any acid than they do in water. The addition of any salt to the acid reduces the amount of this swelling; and this the more the higher the concentration of the added salt. At the same concentration, different salts are unequally effective in this regard, and here the same order is noted as in the case of the pure protein, such as fibrin.

The amount of swelling which any protein colloid, such as fibrin, shows in a neutral medium corresponds with the normal swelling (normal water content) of any cell or tissue. The increased amount of swelling when acid is added corresponds to the increased swelling of a cell or tissue when this is edematous. Technically put, we say that the colloids of protoplasm have normally a certain hydration capacity, and that when the tissues have become edematous their colloids have assumed a state of increased hydration. Just as acids bring about an increased hydration capacity of fibrin, so also does their abnormal production or accumulation in the body increase here the hydration capacity of the body colloids. Not only can it be shown that every such abnormal production or accumulation of acid in the body is followed by an edema, but, conversely, it can be shown that every case of edema gives evidence of such an abnormal production or accumulation of acid. What are listed as "causes" of edema (heart disease, arteriosclerosis, respiratory disease, anemia, intoxication, infections of various kinds, etc.) — all have in common this point, that they are means by which an abnormal production or accumulation of acid in a part or all of the body may be brought about.

But acids are not the only substances which can increase the hydration capacity of a protein colloid or of a tissue, though it seems at present that they are the most important. The alkalies do this also. But more interesting is the fact that urea, pyridin, and certain amins are also able to do this. Urea and urea-like substances tend to accumulate in the body in certain types of kidney disease, and many of the toxins of the infectious diseases are amins. The edemas encountered in these clinical conditions may, therefore, be in part accounted for through the presence of this second class of substance in some or all of the tissues of the body, in addition to the presence of acids.

V. THE STATE OF THE WATER IN THE BODY

But not only do all the tissues of the body hold their normal or abnormal amounts of water as hydration water in combination with the body colloids, but the liquids of the body, such as the blood and lymph, do this also. In other words, *there is in our bodies no "free" water analogous to the water we drink.* It exists in all the tissues and body fluids only in combination (as water of hydration). When any free water appears in the body, it is quickly removed by one of the secretory organs, such as the kidney. Conversely, it is impossible to get any secretion except as we furnish the secreting organ free water. To apply this to the kidney, we may say that we will get a secretion of "urine" only in portion to the amount of water given the patient to drink.

VI. DIURESIS AND DIURETICS

Water is, in other words, the only true diuretic. What then do we mean when we speak of a diuretic substance or drug? A diuretic is any substance which aids in furnishing a working kidney free water, or which helps to maintain in a kidney the necessary conditions, such as oxygen supply, etc., that are needed to permit the kidney to do its work. Urinary secretion may fail, either because we furnish no free water or because a kidney is not given the proper conditions under which it may do its work.

The intravenous injection of any amount of blood, blood serum, or a hydrophilic colloid in which all the water is bound to the colloid, is followed by no increase in urinary secretion. This is because no free water is given. The same amount of water when given free, as in the form of a saline solution, is followed by a prompt increase in urinary flow.

When equal amounts of sodium chlorid solution are injected, we get increasingly greater amounts of urine, with progressive increase in concentration of the salt. This is because the salt dehydrates the body tissues, and the free water thus obtained is added to that which is being injected. The salt owes its diuretic action, therefore, primarily, not to any effect upon the kidney, but to its action in dehydrating the colloids of the whole body.

When equal amounts of equally concentrated solutions of different salts are injected, it is found that the order in which they produce diuresis is the same as the order in which they dehydrate (protein) colloids. Thus, in a series of chlorids, the metals arrange themselves in the following order, the one most powerful in producing diuresis being named last: potassium, sodium, magnesium, strontium, calcium. In a series of sodium salts, the acid radicals arrange themselves as follows: chlorid, nitrate, bromid, iodid, acetate, phosphate, sulphate. The greatest diuresis of all is produced by a salt which is made up of a powerfully dehydrating base with a powerfully dehydrating acid—for example, magnesium sulphate.

The diuretic action of these different salts parallels completely their dehydrating effect upon (protein) colloids, a fact which again indicates that they owe their action primarily to their effect upon the body as a whole, acting as diuretics only as they furnish a working kidney free water.

To diuretics of a second order belong drugs like digitalis or caffein, which by their action on the heart and respiration assure a better oxygen supply to the kidney and the body tissues generally. Through improvement in oxygen supply to the kidney and the body tissues generally, the kidney is not only permitted to secrete the free water available for secretion, but improved oxygen supply permits oxidation of the various acids accumulated in the tissues of the body, and so the tissues yield free water, which becomes available for secretion. Whether we deal with normally hydrated or abnormally hydrated tissues, the effect is the same. Under the influence of "diuretics" an edema is decreased, not because the secretory organs of the body have been "stimulated" to pull water out of the tissues, but because the "diuretics" act upon all the tissues of the body, decrease directly or indirectly their hydration capacity (lead to their shrinking, in other words), and the squeezed off water is then thrown off by the kidneys, bowel, skin, or lungs.

VII. NATURE OF NEPHRITIS

After this general introduction regarding the nature of water absorption and secretion by protoplasm under physiological conditions and in states of edema, let us pass to the consideration of a specific organ, namely, the kidney, which under certain pathological conditions suffers changes of which edema constitutes an important part. In order to make my argument clear, let me begin by stating a general conclusion, and then adduce the evidence which justifies it.

I use the term "nephritis" in its generally accepted clinical meaning as covering that symptom complex which is characterized by the appearance of albumin in the urine, certain morphological changes in the kidneys, the associated production of casts, quantitative variations in the amount of urine secreted, quantitative variations in the amounts of dissolved substances secreted, etc.

In order not to confuse things, let us consider first such nephritides as follow, for example, a general intoxication of the kidney, in other words, the so-called generalized parenchymatous nephritis. Where belong the other types of nephritis, as, for example, the chronic interstitial type associated with a cardiac hypertrophy and high blood-pressure, we shall see later.

All the changes that characterize nephritis are colloid-chemical in nature, and are produced through changes in the colloids making up the kidney. As of first importance in bringing about these colloid-chemical changes, I count an abnormal production or accumulation in the kidney of acids and of certain other substances which in their action upon colloids behave like acids.

If this conclusion is correct, it must be demonstrable in three directions. First, we must be able to show that there is evidence in every case of nephritis of an abnormal production and accumulation of acids and similarly acting substances in the cells of the kidney. Second, we must be able to prove the converse, namely, that any method by which such an abnormal production and accumulation may be brought about results in the signs and symptoms characteristic of nephritis. Third, if we succeed in analyzing correctly, in the terms of colloid chemistry, the changes which are characteristic of what clinically we call nephritis, we should be able to do something, to relieve these clinical signs and symptoms or, better, prevent their development. This last statement takes us into the heart of the problem of treatment which we shall in consequence consider last.

VIII. EVIDENCE FOR THE ABNORMAL PRODUCTION AND ACCUMULATION OF ACIDS AND LIKE SUBSTANCES IN THE KIDNEY

What evidence have we, first of all, to show that in every case of nephritis there is evidence of an abnormal production or accumulation of acid, and similarly acting substances in the tissues composing the kidney? Proofs for this may be brought from three directions: first, when the urine is analyzed it is found that its acidity (whether measured by the old method of titration or in the more modern terms of the hydrogen-ion acidity) is always high; second, as even the older clinical students of the problem knew, the so-called alkalinity of the blood is reduced. These things already justify the conclusion that that which lies between the blood and the urine, namely the kidney, must show an abnormally high acid content. But proof for this may be brought directly. Certain dyes, for instance, may be introduced into the kidney which will show color only when a certain degree of acidity is reached. Such dyes do not stain a normal kidney, but when a kidney has been rendered nephritic it takes up the stain readily.

IX. EVIDENCE THAT SUCH ACCUMULATION IS FOLLOWED BY NEPHRITIS

The converse of the above statement, namely, that any scheme which results in an abnormal production and accumulation of acid in the cells of the kidney is followed by the signs and symptoms of nephritis, is of great importance in our everyday clinical work, because what we call the causes of nephritis are, as we shall see, only such things as lead to an abnormal production and accumulation of acid and like substances in the kidney. Since we shall, in discussing treatment, find ourselves under the necessity of recognizing and removing as many of such features as we can, it behooves us to get them clearly in mind.

The quickest way in which to increase the acid content of the kidney is to inject acid intravenously. When we do this, we find that the animal thus experimented upon begins to show a decrease in urinary output, which may go to the point of complete suppression, while such urine as is secreted is not only highly acid, but is charged with albumin, blood and casts. At the same time, the animal begins to retain the water that we are injecting along with the acid, and so develops a generalized edema. In other words, the animal shows all the signs and symptoms of a so-called parenchymatous nephritis.

Some of you will feel like interposing at this point that this is all very good from an experimental point of view, but that it has nothing to do with the practical problems of every-day medicine. Let me assure you, therefore, that it has. As you know, we produce, even normally, enormous quantities of acids in our bodies in the course of our ordinary metabolism. The amount and rate of production of this acid can, however, be greatly increased at will. Whenever our muscles contract, they do so by reason of a production of acids (chiefly lactic acid) in them. When we exercise quietly, the oxidation of these acids follows rapidly, so they never accumulate to any extent in the muscles. But suppose, as in athletic endeavors of various sorts (rowing, running, basket-ball matches, etc.), we increase the rate at which the acid is produced. Our respiration and circulation then become accelerated in the effort to supply us with sufficient oxygen to oxidize the increased amount of acid thus produced. But when we work our muscles to the point of dyspnea, it means that in spite of the increased cardiac and respiratory activity we are no longer succeeding in this attempt. The lactic acid, therefore, spills over from the muscles into the general circulation, and by this is carried to the kidney. Under these circumstances we might expect to find albumin and casts in the urine. Perhaps you think that such hard athletic games occasionally yield a little albumin. It will interest you to know that they do yield, not a little, but a great deal. After hard athletic endeavors, athletes may show several grams of albumin to the liter, and such quantities of casts as we see ordinarily only in examining the urines from acute nephritics.

Now, the real reason why the athlete shows albumin and casts is because his respiratory and cardiac activity are inadequate, during the times of great acid-production in the body, to furnish sufficient oxygen to oxidize the acid as formed. But, as I stated before, we need a good circulation and respiration even to oxidize those quantities of acids which are produced when the organism is in a state of comparative rest. This explains why, when the circulation becomes embarrassed (as in heart disease) or when the respiration becomes interfered with (as from a pleurisy with effusion) that the acid accumulation in the body mounts, and as this acid accumulation makes itself felt in the kidney, albumin and casts appear in the urine.

But, even if we do not interfere with the heart's activity or the respiratory activity, but interfere with the oxygen-carrying power of the blood, as through anemia or carbon monoxid poisoning, we shall then also get this disproportion between the rate of acid production in the body and its proper oxidation, which, again, results in an abnormal accumulation of acid in the kidney, and therefore in the albuminuria and casts so common in these conditions. A lowering of body temperature as incident to exposure to great cold also brings this result about.

You will observe that I have thus far spoken of conditions leading to nephritis which, in the main, lie entirely outside of the kidney. I emphasize this because all such extrarenal factors must be discovered, and removed as far as possible whenever we try to discover the cause for, or to relieve the signs and symptoms of, this clinical entity. But any cause which will interfere, directly or indirectly, with the normal oxidation chemistry of the body cells, and which affects the kidney itself, will lead to the appearance of albumin and casts in the urine and to the morphological changes characteristic of nephritis in the kidney itself. It is for this reason that tumors pressing upon the afferent or efferent blood vessels of the kidney, or an arteriosclerosis involving the whole or pieces of the kidney, a thrombosis, an embolism, or similar disturbances—all result in the appearance of albumin and casts in the urine. Or without interfering with the circulation of blood into or through the kidney directly, we may make it impossible for this organ to use the oxygen which is brought to it. We shall then again have an abnormal production and accumulation of acid in the kidney. Thus it comes about that we poison the kidney and produce a nephritis with the toxins of an infectious disease, with chloroform, ether, or alcohol, with arsenic, uranium, chromium, or lead, or with such substances as phosphorus or the nitrites.

X THE COLLOID-CHEMICAL CHANGES IN THE KIDNEY CHARACTERISTIC OF NEPHRITIS

The acids, and similarly acting substances, which in their action upon the kidney lead to the various signs characteristic of this pathological condition, do so on the basis of the colloid constitution of the kidney about as follows:

The kidney is composed of a series of colloids. Those which interest us most and make up the bulk of the kidney are the protein colloids, and the general way in which they behave toward acids of various kinds has already been touched upon.

When such a protein colloid as fibrin is placed in a neutral solution (water) it swells somewhat. This is analogous to the normal state of the kidney. If a little acid is added to the water containing the fibrin, it swells much more. This is analogous to the enlargement of the kidney in nephritis (edema of the kidney). But at the same time that the fibrin swells in this way, it also tends to go into solution. This is analogous to the going into solution of the kidney substance in nephritis, in other words, to the albuminuria.

The grayness of the kidney cells in nephritis is due to the precipitation of a second protein colloid contained in the kidney cells. This second protein behaves like casein. Normally, this is "dissolved" in the kidney protoplasm through the presence of alkali. Under the influence of an abnormal production of acid in the kidney, it is precipitated. The precipitation of this colloid with the swelling of the other gives the combination long familiar to the pathologists as "cloudy swelling."

Under the influence of a little acid, the kidney falls apart into its morphological constituents. The epithelial cells stick together and loosen in mass as the cement substances that bind the kidney structures together "dissolve." This marks the origin of the epithelial cast. By more prolonged action of the acid, or with a rise in its concentration, the epithelial casts are converted into granular casts, and later still into hyaline casts. The hyaline casts can be reconverted into granular casts by neutralizing the acid or by adding various salts to a given concentration of acid.

The process of the secretion of water by the kidney is made up of two parts; first, an absorption of water from the blood by the kidney; second, a giving off of this same water into the uriniferous tubules. The available experimental facts can be most readily interpreted by regarding the former as a process of water absorption by the kidney colloids, and the second as a loss of water by these same colloids. The absorption half of this reversible reaction seems to be controlled by the production of carbon dioxid in the kidney cells, while the loss of this same carbon dioxid to the blood permits the subsequent loss of the absorbed water out into the uriniferous tubules. The presence of acid in the kidneys interferes with this play, and so with water secretion. A second reason for a failure of the nephritic kidney to secrete its usual amount of water lies in changes present in the body as a whole, whereby the body comes to hold on to water in such a way that none is left over as "free" water to be secreted, as already discussed.

The absolute decrease in the amount of dissolved substances secreted by the nephritic kidney is secondary to the absolute decrease in the amount of water secreted, for the secretion of any dissolved substance is secondary to the secretion of water. The water washes the dissolved substances out of the kidney cells as it flows down the uriniferous tubules. The reason why the proportion of the various urinary constituents to each other is changed in nephritis, is due to the fact that the *absorption* properties of the kidney colloids are changed through the presence of an acid, and so the kidney cells not only absorb the various urinary constituents in a different proportion from the blood, but these are also washed out of the cells after adsorption in proportions different from the normal.[1]

XI CLASSIFICATION OF THE NEPHRITIDES

What has been said covers the essential elements of that which constitutes the picture of what we commonly call acute or generalized parenchymatous nephritis. But we know that there exist also chronic types of nephritis, and that in some of these we observe high blood-pressure, cardiac hypertrophy, etc.

This brings us to the matter of the classification of the nephritides.

There is really only one type of nephritis—parenchymatous nephritis. There is, however, a difference in the *amount* of kidney substance that may be involved. It is well to distinguish between *generalized* and *focal* nephritis. It is in the generalized type that we observe the greatest decrease in urinary output, the most highly concentrated and most highly acid urine, the greatest amount of albumin, and the largest number of casts. When only smaller parts of the kidney are involved, all these signs are proportionately less. The first type of nephritis is found in cases of general intoxication, as in scarlet fever or in carbon monoxid poisoning, after an anesthetic, or in the more chronic types of poisoning, as with phosphorus, chromium, or lead. If larger or smaller pieces of a kidney thus affected die, and the defect is replaced by connective tissue, the kidney substance is reduced in amount, and we find on autopsy the so-called *secondarily contracted kidneys* — one type, in other words, of the so-called chronic interstitial nephritis. As long as one-fourth of the total kidney substance which a normal animal has is left intact, the animal, or patient, may be unaware of the fact that he has kidney disease, for even less than this amount is adequate for all ordinary demands. Neither does such an animal, or patient, show any increased blood pressure, cardiac hypertrophy, uremia, or any other of the alleged consequences of kidney disease. He may live and die without being aware of his kidney condition, and we have at the present no way of diagnosing such a state before death.

In the commoner types of chronic interstitial nephritis which we find in association with blood vessel disease, heart hypertrophy, and high blood pressure (the so-called *primarily contracted kidney*), we also deal with a gradually progressing focal destruction of kidney substance. The primary change in this condition is not kidney disease, however, but *blood-vessel disease;* and the general signs observable in such a patient are, primarily, not due to defective elimination of poison through the partially destroyed kidneys, but to the effect of the vascular disease itself in the different organs of the body. The heart hypertrophy and the high blood pressure are nature's method of meeting the consequences of the vascular disease. In consequence of the changes in the blood vessels, one fragment after another of the kidney may be destroyed, and replaced by connective tissue, but between these spots the kidney is largely normal; and so the decreased urinary output, the albuminuria, the casts, etc., may be largely, or entirely, absent in these patients, at least in the earlier stages of their disease.

While infections of the kidney are not ordinarily classed with the true nephritides, they might as well be. The kidneys here show the same changes, and die in the same way, as when a poison affects a whole or any part of the kidney. An infection involving the whole kidney (general intoxication) shows much albumin, many casts, and a small water output. When the infected spots are small, as in the early stages of renal tuberculosis, these findings are also less intense. And since blood-vessel disease does not usually go with the ordinary infections, high blood pressure and cardiac hypertrophy are usually absent in these cases of kidney infection.

XII ON THE TREATMENT OF NEPHRITIS

These remarks will suffice to indicate why I have formulated the general rule for the prophylaxis and treatment of nephritis in the following terms: As far as possible, *avoid, remove, and combat every condition that favors the abnormal production or accumulation of acids and like-acting substances in the kidney.* Evidently, the pathological condition of the patient must be taken into consideration in the application of this rule. An anesthesia nephritis, for example, with suppression of urine, will call for a more aggressive therapy than a nephritis secondary to a slowly progressing arteriosclerosis. If we succeed in getting the first nephritic over his immediate kidney symptoms, we may make a hopeful prognosis; for, when he has exhaled his anesthetic, he has rid himself of the condition that was responsible for the abnormal acid content of his kidneys. But in the case of the second nephritic, so hopeful a prognosis cannot be made; for, while we may also benefit him, he continues to carry the original condition (his arteriosclerosis) that brought him to us, even after we have treated him.

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[1] The "fatty changes" observed in nephritis are not touched upon here. "Fatty degeneration" is also a colloid-chemical problem, as Marian O. Hooker and I have recently shown. See "Science," xliii, 468 (1916), as well as the current numbers of the Kolloid-Zeitschrift.

My rule for the treatment of the threatened or established case of nephritis may be summarized in these words: *give alkali, salts, and water.* The reasons in brief are as follows: the alkali is given in order to neutralize the acid present in abnormal amount in the kidney and in the other edematous organs of the body; the salts are indicated (sodium chlorid is no exception) because the various changes induced in the kidney colloids by acids are counteracted by adding to such acid any salt, even a neutral salt; we need to give water in order to have more of it present in the body than is necessary to saturate all the body colloids, otherwise we shall have no "free" water left for the secretion of urine.

For exact details as to how such a scheme of treatment is to be used (and only its proper use will give satisfactory results) the reader must be referred to a longer discussion than is here possible.[2]

It is advantageous to add to the alkali, salt, and water therapy already discussed, an active administration of sugar, dextrose (chemically pure, anhydrous glucose), either by rectum or intravenously. Or dextrose, or some disaccharid, or starch may be given by mouth, if the patient is able to take food, or is not vomiting. The reasons for giving sugar are two: first, the older, well-recognized one, that carbohydrate starvation is very common and a potent cause of "acidosis"; and, second, because sugar, which is comparatively ineffective in reducing an excessive hydration of protein when induced through an accumulation of acid, is very effective in reducing the hydration produced by other means, while the salts, which are very effective in reducing an acid hydration, largely fail when the hydration is produced by other means. As we wish to combat all the possible causes of the hydration at once, we give besides the alkali both salt and sugar.[3]

XIII ON THE ALLEGED CONSEQUENCES OF KIDNEY DISEASE

A final word is necessary regarding the alleged consequences of kidney disease. It is generally urged that the generalized edema, the "uremia," etc., of a patient, is secondary to the kidney disease. This is in the main incorrect; for nephrectomized animals develop either no edema at all or only a very slight one, as compared with the edema developed, for instance, after the injection of uranium nitrate. Neither do they die with signs or symptoms which clinically we call "uremia," even though they live many days. But when we give an animal a "kidney poison" of some sort, such as uranium, it develops an edema in a few hours, which at the end of about two days may have increased to represent fifty per cent. of the original body-weight of the animal. This means only one thing—that *what we call the consequences of kidney disease are not consequences, but are the same thing as the kidney disease manifested in the different organs of the body,* and all due to the same poison which originally produced the kidney change. The headache, stupor, coma, and convulsions of "uremia" are due, in the main, to an edema of the brain, the changes in sight to an edema of the optic nerve or retina, the vomiting to an edema of the medulla, and the generalized edema to a swelling of the body tissues generally, all induced through the same poison circulating through the body and responsible for the edema of the kidney (nephritis).

What relation does the "uremia" of chronic kidney disease associated with cardiac hypertrophy, high blood-pressure, etc., bear to the uremia just discussed? Is it due to retained poisons which the kidney has failed to excrete? Not in the main. This "uremia" is also an edema of the brain, but is induced this time through the defective blood-supply to the brain brought about through vascular disease. These "uremic" attacks are periodic edemas, and are analogous to the periodic glaucomatous attacks (edemas of the eyeball) to which these same patients are liable.

XIV REMARKS ON VASCULAR DISEASE

These facts will serve to emphasize why, in treating our patients with chronic interstitial nephritis, we need from now on to pay more attention to the primary vascular disease and to its relief than has thus far been our custom. We must stop treating the kidneys as something primary, and the high blood pressure, cardiac hypertrophy, etc., as things bad in themselves, which they are not. We must do everything in our power to stop the progress of the blood-vessel disease itself. And this raises the question of the cause for the pathological changes in the blood vessels. Everything has been named as a cause of blood-vessel disease, though that any of the things are really concerned can hardly be said to have been proved. However bad alcohol, gastro-intestinal poisons, etc., may be for an established vascular disease, this is not synonymous with saying that they cause it. Whenever a general intoxication strikes an organ, that organ is usually affected fairly uniformly, and so we should expect that if any general poison were responsible for vascular disease, all parts of a blood vessel, say all the media or all the intima, would be uniformly involved; but it is characteristic of vascular disease that it appears in spots. There must, therefore, exist for it a spotty cause, and not such a general cause as a generalized intoxication.

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[2] See my book "Oedema and Nephritis," second edition, pages 537 to 644, published by John Wiley and Sons, New York, 1915.

[3] Under no circumstances are alkali and sugar ever to be boiled together or mixed and kept in stock. They are best given at separate times, or are not mixed until the very moment that they are to be administered.

It is characteristic of micro-organisms producing thrombotic changes in the smaller blood vessels to give rise to such spotty destructive lesions. In any case of vascular disease careful search should, therefore, be made for possible infections. Of first importance, no doubt, stands syphilis. In cases where such a cause could be shut out with a fair degree of certainty, I have looked for infected tonsils, infected teeth, infected ears, infected antra, infected pelvic organs, and old genito-urinary infections as possible sources of microbic infection of the blood stream with thrombotic changes in the smaller capillaries of the parenchymatous organs and in the vasavasorum of the larger blood vessels; and it has seemed to me that through removal of such chronic foci of infection from accessible regions, together with a scheme of living directed toward building up the natural resistance of the body to infection, greater relief was assured patients with cardiovascular-renal disease than by our older methods.

IMPOSSIBLE TO COMPLY

Everybody in New Orleans knows a certain well-known judge who has a soft spot in his heart for the little ones, as instance his frequent treat to the orphans.

One day near his home he met a child crying bitterly.

"What's the matter?" asked the Judge. "Now be a good little boy and stop crying."

"I tan't be a dood 'ittle boy," the child sobbed.

"Now, here's a nickel. Take it and tell me why you can't be a good boy."

"'Cos I is a little girl."

And the judge walked on.—*The Southern Pharmaceutical Journal.*

COMPOSITION OF SWEAT IN NEPHRITIS *

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In 1894 Drs. Austin and Miller of the University of Pennsylvania made a series of studies upon cases of nephritis for the purpose of determining the effect of sweat baths upon the total noncoagulable nitrogen in the blood. The great care taken by Dr. Austin in all his experimental work and his very thoughtful consideration of his results renders his findings of importance. As a result of their studies upon twelve cases they concluded that there was no evidence that sweat baths lead to any significant change in the concentration of the noncoagulable nitrogen of the blood. This conclusion cannot be disputed. It does not follow, however, that the action of the sweat baths which have been used for so many years in the treatment of nephritis, originally with the idea of reducing the dropsy by drawing water through the skin and subsequently for some supposed effect on the condition of the kidneys so that very often nowadays they are used in many cases without edema, are of little or no value.

It must be confessed that the treatment of chronic nephritis is at the present time in a somewhat unsatisfactory state. We are in the habit of prescribing a great deal in the form of diet, exercise, climate, etc. We occasionally give drugs to meet special indications such as blood pressure, anemia, but there is no evidence that we have as yet discovered anything that actually lessens the progress of the sclerotic process in the kidney. When toxemia occurs, and it is quite probable that there is more than one form of toxemia in kidney disease, it seems in some cases as if benefit was achieved by active elimination, and among the chief measures of accomplishing this are blood letting, purging and sweating. Efforts to determine the value of the later method are by no means new. It was said after Scholfin observed that in certain cases of severe uremia crystals of urea formed on the skin deposited from the sweat, that there could be no doubt of vicarious elimination of poisonous substance in the blood by way of the sudorific glands. This observation was confirmed by a number of other observers, although, if I am not mistaken, the greatest number of instances observed by a single clinician was five cases reported by Hirschsprung. It must be remembered, as Loofs states, that it is strictly a phenomenon of the agony and probably never occurs in health.

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*Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

The analysis of the sweat is difficult. The collection of the sweat is by no means easy. The different methods which have been devised are only partially satisfactory, but the three chief difficulties are concentration of sweat by evaporation which almost inevitably occurs, mixture of sweat with the secretions of the sebaceous gland giving rise to the presence of fatty acids and the chemical changes occurring in the sweat shortly after it has been secreted, partly perhaps as a result of the presence of fatty acids, partly as a result of other processes. The methods that have been devised for collecting sweat are fairly numerous: Simply allowing the sweat to run into dishes that are placed beneath the patient; to enclose a limb in a rubber bag so that the sweat can be collected in the bag and then analyzed; to cover the patient with dry cloths that have been carefully washed in distilled water, these may be further enclosed in rubber cloth and then ringing them the sweat can be expressed; by clothing the patient in some absorbent substance and then subsequently washing this substance thoroughly with distilled water in order to extract all soluble material deposited in it. The method of Plaggemeyer and Marshall is perhaps the most accurate. It is to enclose the subject in a rubber bag placing him in a hot-air bath. For clinical purposes with the ordinary hospital experience most of these methods are too complex.

The results of the different investigators have varied considerably. When one realizes that the methods of investigation varied greatly this is not surprising. According to Von Noorden the maximum amount of nitrogen in sweat eliminated in the course of twenty-four hours does not exceed 1 gram and of sodium chlorid does not exceed 2 grams. Cramer found 0.128 gram of nitrogen in clothing that had been worn for twenty-four hours, Schwenkenbecker and Spitta 0.3 gram of nitrogen in twenty-four hours. Eijkmann, making his experiments in the tropics, found that in twenty-four hours during rest there was 0.222 gram, but in twenty-four hours during the course of arduous work the amount of nitrogen excreted by the sweat ranged from 1 to 1.5 grams. Loofs made a very careful series of estimations by surrounding the patients with absorbent material, then, washing this very thoroughly in distilled water, analyzed the amount of soluble material in the distilled water. He found that in twelve cases of nephritis the amount of nitrogen excreted in twenty-four hours was 0.25 gram, in six normal cases the amount was 0.25 gram, and in one case of rheumatism the amount was 0.29 gram. In the rheumatic case the amount of sodium chlorid was also greatly increased above the normal. Loofs therefore drew the conclusion that there was no additional excretion of nitrogen by the sweat in nephritis. Unfortunately, he did not show that there was an excess of noncoagulable nitrogen in the blood of any of these cases so that it cannot be concluded that the sweat eliminates the same amount of noncoagulable nitrogen no matter what the concentration of the latter in the blood. Tachau devised another method which gave slightly different results. He surrounded the patient with absorbent material and then put him in a sweat bath. He estimated carefully the amount of sweat that was lost by weighing the patients before and after exposure in the sweat bath and then estimated the total amount of nitrogen and sodium chlorid excretion. In twelve cases of chronic nephritis the amount of nitrogen calculated for 100 c.c. of sweat was 0.26, in nine cases of subacute and acute nephritis it was 0.22, in six normal cases, 0.17. The maximum was found in a case of chronic lead poisoning, 0.49. He reached the conclusion that the amount of noncoagulable nitrogen excreted bore some proportion to the amount found in the blood.

There is very little trustworthy information on the subject of the composition of the sweat. If one consults Howell's textbook on physiology he will find that the sweat is described as a liquid, specific gravity 1.004, alkaline in reaction unless this is changed by the presence of fatty acids; that the chief saline constituent is sodium chlorid; that sulphates and phosphates are present, and that in normal cases the organic constituents are of very moderate importance. It is therefore to be concluded that in Dr. Howell's opinion very accurate studies of composition of the sweat are still lacking. Otherwise he would have included them in his book. It seemed to me that, although the conclusions of Drs. Austin and Miller are absolutely correct, the inference that might be drawn from their experiments that sweating is of no value in nephritis is not entirely justifiable. The mere fact that the concentration of noncoagulable nitrogen in the blood was not reduced by any means proves that the amount of noncoagulable nitrogen in the body remains the same. One cannot, for example, conceive after a profuse sweating that the amount of sodium chlorid in the body remains the same and yet the concentration in the blood is not altered. It is therefore conceivable that the noncoagulable nitrogen is to a certain extent withdrawn from the tissues instead of from the blood and that in all probability it is the nitrogen in the tissues, assuming that this contains some of the poisonous elements of nephritis, although this assumption is by no means established as yet, that may be the more harmful. It seems to me possible to reach some results by comparing the noncoagulable nitrogen in the blood and in the sweat. The number of cases available for this work is not large.

The first patient, Miss C. M. B., about 50 years of age, was first seen four years ago. At that time she had a local infection of the skin above the knee. Examination revealed the somewhat surprising fact that her blood pressure was 225 systolic and 135 diastolic. On veratrum veride it dropped in five days to 160 systolic and 90 diastolic. It soon rose to 235 systolic and 142 diastolic. It remained well above 200 for several months. During all this period the urine was normal chemically and only occasionally after prolonged centrifugation could a cast be found. There was a systolic murmur over the base of the heart. There was occasionally a strong reaction for indican. The patient complained of feeling easily tired;' she had lived an exceedingly active life in society and in her family. Two years later the blood pressure remained about the same, occasionally going below 200. In this period she had not curtailed her activity in any way and seemed quite as well as when she first came under my observation. Her white blood cells remained normal. She had various other infections such as bronchitis, a severe scald of the legs and arm from hot tea, and a severe fall with extensive bruising of the body. The red blood cells were usually below normal and on one occasion she had quite a severe anemia, the red blood cells being less than three million.

In 1916 a phenolsulphonephthalein test was made, first hour 57 per cent., second hour 30 per cent., total 87 per cent. Blood nitrogen at this time was 48.9 mg. per 100 c.c. of blood. The blood pressure was 250 and 160. A repetition of the phenolsulphonephthalein test six months later gave first hour 29.5 per cent., second hour 29 per cent., total 58.5 per cent. As some of the urine had been lost this was below the actual figures.

In the present year she has had one attack of numbness of the left side without loss of power. This disappeared on purging with epsom salt. During the attack the left knee jerk was distinctly more active than the right although the left side was the one affected. At this time the alveolar air was tested and found to be 42 per cent. Her blood pressure was rather lower than usual, 190 systolic and 130 diastolic, but in a short time it reached 235 again. The phenolsulphonephthalein test gave first hour 20 per cent., second hour 14.5 per cent., total 34.5 per cent. For the first time it was definitely below normal. The blood nitrogen was 37.8 mg. per 100 c.c. She was passing through the climacteric and suffered considerably from flushes. Her appetite was ravenous and although she was anxious to control it on account of her obesity she seemed unable to do so. Neither did she restrict her social activities. She was sent to the hospital and placed on sweat baths. The treatment previously had been beneficial.

On May 23 the phenolsulphonephthalein test gave first hour 17 per cent., second hour 15 per cent., total 32 per cent. The sweat was collected and tested for phenolsulphonephthalein and was entirely negative. On this occasion her alveolar air was 37 per cent. On May 20 her blood urea was 48 mg. per 100 c.c. of blood. Blood nitrogen was 39.2 mg., sweat urea 84 mg., sweat nitrogen 84 mg. On May 28 urinary urea was 13.48 grams per liter, urinary nitrogen 6.28 grams per liter, urinary ammonium 0.44 gram per liter; urea sweat was 1.56 grams per liter, urea nitrogen 0.73 gram per liter. On May 16 nonprotein nitrogen in the sweat was 57 mg. per 100 c.c.; urea in sweat was 66 mg. per 100 c.c., carbon dioxid 58.5 volume per cent., sugar 0.05 per cent.

During this treatment her blood pressure was better than it had ever been. It ranged from 175 and 105 to 152 and 100. The alveolar air, however, showed a slight loss of percentage, going down from 35 to 30 per cent. associated with a slight dyspnea. Her urine was examined daily and the specific gravity ranged from 1.006 to 1.024. The average specific gravity was 1.01677 and the urine on six occasions gave a faint trace of albumin. Sugar was not observed and no casts were found.

Mrs. E. B. was referred to me on July 30 by Dr. Salmon for treatment. She was 43 years of age, had been married twenty-two years and had never been pregnant. She complained of cough, shortness of breath, weakness, poor vision and dropsy. January, 1917, she began to feel badly. In February she had a severe attack of coughing that lasted for a week. She thought she had overexerted at that time. The cough was worse at night but there was no expectoration. She was short of breath and not able to lie flat in bed. Often through the night she was obliged to get up and sit in a chair. Since then she has had several similar attacks. There was no pain in the chest. In July she became very much worse. The dyspnea was intense after very slight exertion. She was treated by an osteopath who ascribed her symptoms to the fact that the muscles were tied up. On July 29, she noticed that her eyesight was failing and the following day she came to the hospital. For a month she had noticed edema of the ankles. There had been some suggestive manifestations. There had been polyuria and frequent micturition. Menstruation had been normal from the age of 13 years. When 9 years of age she had been jaundiced but otherwise the previous history had been entirely without incident. The family history was of no significance.

The physical examination gave deep ringing heart sounds, a blood pressure that ranged from 215 and 120 to 240 and 150. Just before death there was a slight reduction. Alveolar air varied from 20 to 25 per cent. The urine contained albumin, numerous hyaline and granular casts, red and white blood cells. The specific gravity ranged from 1.010 to 1.015. The quantity when it could be obtained ranged from 1 ounce to a maximum of 14 ounces in twenty-four hours. The phenolsulphonephthalein test was taken twice. On both occasions there was less than 10 per cent. eliminated in two hours.

On August 3 she passed 12.4 grams of chlorids in twenty-four hours. Sweat urea on this date was

180 mg. per 100 c.c. On August 6, sweat urea 990 mg. per 100 c.c., nonprotein nitrogen 460 mg. per 100 c.c. On August 16 urea nitrogen was 115 mg. per 100 c.c., of sweat. On August 1 the noncoagulable nitrogen was 118.2 mg. On August 18 the blood urea was 142.8 mg., red blood cells 2,800,000, hemoglobin 40 per cent., polymorphonuclear cells 81 per cent., lymphocytes 19 per cent.

THE SOCIAL AND GENERAL MANAGEMENT OF CASES OF NEPHRITIS AS SEEN IN THE MEDICAL DISPENSARY*

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It is not my intention in this paper to attempt in any way to discuss either the diagnosis or treatment of nephritis by a résumé of the literature or a critical analysis of a series of cases; rather it is written to give a more or less complete report on the method of treatment pursued in the Medical Dispensary of the University Hospital, Philadelphia, and to show how with the improvement of our knowledge of the processes involved in nephritis, what has been possible to do almost routinely in the general management of such cases in a large teaching clinic.

During the past year it had occurred to me that the usual routine measures, as carried out by us for the diagnosis of the various forms of nephritis, were somewhat inadequate for a proper differentiation of the various types, and that if we would improve our treatment of such cases, it would first be necessary to tell which organ was principally at fault in the large numbers of cases which were formerly classified under the heading cardiorenal disease. In attempting anything new however along these lines we must bear in mind that only simple and easily carried out tests are feasible in our work, and that any elaborate laboratory data that would necessitate too much time to perform, is not available for routine work in a teaching clinic where the patients are numerous and their time somewhat limited, and where there is more or less constant confusion resulting from the daily attendance of a large class of students.

To better illustrate my meaning it might be well to mention briefly our method of treating the patients. After being more or less roughly classified according to their particular malady, they are admitted at a central desk and assigned to one of the four rooms. They are then given in charge of two students who take a complete and detailed history and physical examination, the results of which are communicated to the instructor in charge, who, after commenting on and criticising the students' report, prescribes for the patients. A routine urine examination and blood pressure reading are insisted upon, and any other laboratory work, such as sputum and blood examinations, are done as indicated, and the reports thereof tabulated upon the history.

I think that, as a rule, such treatment is satisfactory and is all that is possible under the conditions. In chronic nephritis, however, I have felt for some time that we could do more, so as to more nearly approximate the more detailed examinations as done in the ward, bearing in mind, of course, that our patients are ambulatory and our control of them, therefore, not so absolute. I have become especially interested in this type of case. We see quite a few elderly people who come complaining perhaps of some general weakness, or localized nerve or muscle pain, or vertigo, in whom the physical examination reveals general arteriosclerosis with perhaps some myocardial insufficiency, the absence of edema, the presence of high blood pressure, and in whose urine we may find on careful examination a very faint trace of albumin and an occasional hyaline or light granular cast. They secrete perhaps the normal amount of urine, but we have been at a loss to say whether their hypertension was due primarily to nephritis or was only an expression of a generalized arteriosclerosis, with we knew not what renal function. It was in this type of case that we decided to take advantage of the newer functional tests, and are now routinely testing the functional capacity of the kidneys by means of the phenolsulphonephthalein injections as outlined by Rowntree and his co-workers. In using this reaction I think one important point should be considered and that is to use exactly 1 cubic centimeter of the indicator, for if we are to judge of the functional capacity of an organ by the amount of indicator excreted, it seems to me most essential that the exact amount should be used, as a minim more or less of the fluid injected would have a decided bearing on the coloring index of the urine.

In our work we have modified the technic to the extent that we use only one period of 70 minutes for the reading instead of the one and two-hour periods commonly employed. If, however, the reading at 70 minutes shows a marked reduction from the normal, a new observation is made, using the one and two-hour periods.

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* Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

If a patient after having these tests as outlined above shows that he is undoubtedly suffering from a serious disturbance of his renal function, we then use the simple carbon dioxid alveolar tension apparatus as outlined by Marriott. In certain cases which show marked disturbances, a specimen of blood is also taken from the arm, and through the kindness of Drs. Austin and Jonas of the Pepper Laboratory, the estimation of the nonprotein nitrogen and urea of the blood and the nitrogen and chlorid eliminating power of the kidney by means of Ambard's formulas are determined. By these various tests I think we are much better informed as to the exact rôle the kidney plays in the class of cases under discussion, and that appropriate treatment can be more intelligently undertaken. We have by these means, I feel sure, been able to anticipate a serious turn of events in several cases, and by referring cases to the ward, have immediately averted a fatal termination in a few.

Two cases occur to me which admirably illustrate the value of our treatment.

CASE 1.—A white female, 55 years of age, came to us complaining of general weakness. Her physical examination, except for the presence of arteriosclerosis, was negative. The blood pressure was systolic 220, diastolic 110, the urine examination showed a very faint trace of albumin and one hyaline cast. However, her phthalein output was zero for 70 minutes, and the nonprotein nitrogen and urea of the blood was markedly altered. A bad prognosis was given, and the patient advised to enter the hospital. She refused, however, as she said that she was feeling so well; within six weeks she was dead from uremia.

CASE 2.—A white male came complaining of dyspnea and pain in the back. He showed a fairly well-marked myocardial insufficiency with decompensation, a consequent comparatively low pressure of systolic 150, diastolic 95; his urine was practically negative, his phthalein output was only 10 for 70 minutes, and his carbon dioxid alveolar tension was 20-25 by the Marriott reading, showing undoubted signs of acidosis. He was referred to the ward, and after a stay of two weeks was well enough to return to us for further treatment.

As to the treatment of the milder cases which are not suitable for ward care, prophylactically much can be done, not so much as to checking the progress of the disease, but to render the patient more comfortable and to ward off as long as possible more serious symptoms. Advice to the occupational worker as to his daily habits, as well as to the alcoholic and gouty, may be of service. All possible sources of infection, particularly of the mouth and teeth receive proper attention by the dentist attached to the dispensary. Regulation of the patient's life in as much as relaxation as far as possible from all so-called high pressure work, with the consequent adjustment to the particular needs of the individual, is always to be sought for and if possible insisted upon. The often accompanying picture of myocardial insufficiency should receive appropriate treatment, both medicinally and as regards the proper value of rest, sleep and exercise. Our medicinal treatment has been mainly symptomatic; when as we occasionally see there is diminution in the total amount of urine secreted, a simple diuretic mixture is given, with the addition of water in proper amounts, which after all is possibly the best diuretic.

With the aid of our social service dietitian we have placed great dependence on diet in these conditions, mainly because she has been able to see that the patients understand fully exactly how and when to use each particular article of diet arranged. Personally, I have always thought that the less complicated and more easily understood our directions are to the patients, especially in regard to diet, the more likelihood is there of their proper application, and for this reason we have arranged three diets which are perfectly simple and which are explained in detail to each patient by the dietitian. In arranging the diets we have endeavored to spare the kidney, at the same time maintaining the proper nutrition of the patient, and in the more severe cases maintaining as low a nitrogen intake as possible, with, of course, the restriction of all substances irritating or stimulating to the kidney. While the importance of the restriction of salt is not apparently as important in this class of cases as it is in chronic parenchymatous nephritis, for purposes of convenience we have arranged our diet sheets with the words salt free on each one, realizing that the patient will get as much sodium chlorid as necessary in the various foods without additional seasoning at the table. The more severe cases we give a soft diet comprising a liter of milk with the addition of cereals, cocoa and toast. The next diet we add to that stewed fruits, and, as vegetables, rice, potatoes and macaroni with junket as dessert. The most liberal diet is further increased by eggs, small amount of meat, fish and green vegetables. We have also endeavored to maintain some supervision on the amount of water taken daily, as the tendency among many of our patients has been to consume enormous quantities of water, thus throwing more work on both the heart and the kidney.

I have endeavored in the foregoing remarks to avoid particular details as to any one point in the general management of cases of chronic nephritis as seen in the dispensary, and have merely hoped to show what can be done almost routinely in a large clinic both as regards the diagnosis and treatment of such cases, with I feel sure beneficial results to the patients.

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DISCUSSION

ON PAPERS OF DRS. CHRISTIAN, FISCHER, SAILER AND KELLY

Dr. Judson Daland, Philadelphia: The papers which we have heard, especially the first two, are of a character which do not lend themselves to discussion. I fail to recall an occasion when I have had the pleasure of hearing such an extraordinarily classic description of the kidney, its diseases and function. We all recognize the difficulty of making a prognosis in any disease, more especially in renal disease. The papers present the subject in such a comprehensive way that in my judgment they do not permit of discussion, certainly not from my standpoint. Dr. Fischer mentioned the "spotty" type of nephritis which he has traced to certain infections. It seems to me we should also consider recurring toxemias among the extrarenal causes strongly influencing prognosis. Such toxemias often participate in causing renal decompensation.

Dr. F. A. Faught, Philadelphia: The longer we deal with these cases the more important it seems to know their previous history, personal habits and heredity. I feel that time spent in a carefully developed history, a careful study of antecedents, including the patient's environment in childhood and youth up to the time of examination, has a distinct bearing upon the probable duration of the disease. If we can trace the condition of the kidneys over a long period of time we can make a better prognosis than if we develop information to the effect that the patient's kidneys two years before were in good condition. Also bad antecedents in regard to kidney function and circulation must be considered when present. I would repeat that too much time can not be spent in a careful study of the case up to the time when the patient consults us. Let us spend as much time as is necessary in our physical examinations but not forget that every bit of evidence that can be discovered has a bearing on the prognosis.

Dr. A. Alexander Howell, Philadelphia: At the time high blood pressure and nephritis were first being definitely associated and seemed inseparable I was very much confused by those cases of nephritis in which there was low blood pressure. I refer to the type often found in young adults and middle-aged patients with considerable albumin and many casts, who do not complain of the kidneys primarily but come to the doctor because of failing health, or stomach or other complaints. In the light of our present knowledge we know that nephritis and high blood pressure are not inseparable. These cases with normal blood pressure represent the degenerative type of nephritis where the injury to the kidney is diffusely distributed over the renal secreting cells, but where the damage is not sufficient to severely restrict the phthalein elimination from the blood. Such patients get along fairly well over long periods of time in spite of the albumin and casts and they are in little danger of developing severe toxic or uremic symptoms. Anemia, slowly progressive loss of weight and general failure of health form the picture.

The discovery and removal of the infectious or toxic cause in these cases is paramount. As the elimination of nitrogen is fairly good the more than limited restriction of proteins in the diet is contraindicated, as we must use this and every other means of building up the patient. In the cases with high blood pressure, in which individual glomeruli with their dependent tubules are blotted out, the kidney excretion is often severely reduced, and here the cutting down of the protein intake is imperative. A toxic and uremic menace is always present in marked cases of this kind and this danger should be spoken of and guarded against. In the arteriosclerotic type of nephritis associated with general arteriosclerosis and high blood pressure, the phthalein elimination is good provided the heart can maintain the circulation of the kidney. So here again the diet is not the chief factor, but a favorable prognosis depends on the ability of the heart to perform its work and maintain the high blood pressure required by the kidney. In brief, having eliminated as far as possible the possible causes of nephritis, our concern in degenerative nephritis is for the patient's general condition; in glomerulonephritis, lest the protein intake exceed the protein output, and in arteriosclerotic nephritis, lest the heart fail in its task.

Dr. William McKim Marriott, St. Louis: I should like to ask Dr. Fischer for information regarding his experiments on the swelling of fibrin and the application of these results to edema: First, what is the effect of placing fibrin in liquids of approximately the composition of the blood, i. e., having the same bicarbonate content as the blood and the same hydrogen ion concentration, and then changing the acidity of the solution to the same extent as the maximum change that occurs in the blood during life? Does the fibrin swell under those conditions? Even pure water is something like a hundred times as acid as the blood, and when hydrochloric acid is added to water the solution becomes many thousand times as acid as the blood. Is it, therefore, justifiable to draw conclusions concerning human edema from experiments which in no way reproduce conditions occurring in the body? Secondly, I would ask how edema can be explained as a result of acidosis when, in the majority of cases of nephritis with edema, there is no demonstrable change in the acid base equilibrium of the body; that is, there is no acidosis. In the third place, if conclusions are to be drawn from the experiments described by Dr. Fischer, we would expect an excess of the phosphate ions to cause shrinkage of the tissues. In every case in which acidosis is present in nephritis there is a very great increase in the phosphate ions in the blood, an increase as great as 2,000 per cent. having been observed with at the same time a very slight increase in the hydrogen ion content. Why is it that instead of edema we do not get shrinkage of the tissues? Finally, I would ask Dr. Fischer why, when acidosis is overcome by the administration of alkali, edema frequently appears when it has not before been present?

Dr. Christian, closing: I have nothing to add on prognosis, but I may say that it is well always in nephritis to remember that we are dealing with a chronic disease and that the tendency is to draw conclusions from acute experiments in regard to a chronic disease and that this may lead to error. An acute experiment may be an animal experiment in the laboratory or it may be a brief study in the hospital ward of a patient with a chronic disease. Facts coming from that kind of observation are facts, but not necessarily applicable in the explanation of a chronic disease. For that reason, I think the kind of work which Dr. Kelly has reported is very important in the consideration of the problem of nephritis. It is in the outpatient department where patients can be gotten into the habit of returning periodically as long as they live that a great many things can be found out. It is just there that all of us are neglecting our opportunities because so few of us devote to that kind of patient under those circumstances the kind of study that is likely to produce results. Treatment in a chronic disease must be carried out for weeks and months before we can say whether it is helpful or not. Until that is done we ought to be skeptical about diets, skeptical about forcing or sparing the fluid intake, skeptical about diuretic drugs. You will be surprised to see from the literature how little observation has been made consecutively over long periods of time in this group of cases, and really is it any wonder that we know so little about nephritis when we have studied it so little in the way that will probably give us the greatest amount of results? What Dr. Kelly is doing all of us ought to be doing in our clinics and it is that kind of work it seems to me that is most necessary now.

Dr. Fischer, closing: When we have the spotty type of nephritis due to arteriosclerosis we still, in my opinion, are dealing with infection. In other words arteriosclerosis is never toxic in origin so far as I can see, but always infectious. The lesions of vascular disease are always spotty in type and it is inconceivable that alcohol, lead, or any other soluble poison circulating for hours, days or years through an organ should or would affect only spots in that organ. Arteriosclerosis is essentially a disease of the small blood vessels; when we see the large blood vessels involved it is because the vasa vasorum of these have been attacked. The reason why the chronic interstitial nephritis of vascular disease is progressive in type is because, I think, we do not go after points of infection with sufficient energy. If a patient with vascular disease and kidney involvement is properly looked after for points of infection in teeth, tonsils, rectum, prostate, etc., and these are removed surgically, and the patient then lives what some one has called the "godly life," a fairly good prognosis may be made. Whenever we meet high blood pressure with albumin and casts in the urine a primary diagnosis of vascular disease is to be made. The albumin and casts then signify that the kidney has been attacked by the vascular disease.

In reply to Dr. Marriott let me say that fibrin and other proteins swell not only in water but also in various salt solutions. With these salt solutions I include the phosphate and other "buffer" salt mixtures. Beginning with any such simple salt or buffer salt mixture there is a progressive increase in swelling with every increase or decrease in the amount of acid or alkali added. As you go over to the acid side you get increase in swelling. I have reported all these findings and met all the objections which Dr. Marriott has brought up afresh five and ten years ago. I would also mention that we may have "acidosis" without kidney findings and kidney findings without "acidosis," if by acidosis is meant the mere appearance of acetone bodies in the urine. The finding of acetone bodies in the urine is not an index of acid intoxication but only of an improper carbohydrate metabolism which may result in an acid intoxication. The acid intoxication may be sought for clinically in many ways, but let me hasten to add that hydrogen ion determinations, acid titrations, etc., only give help in this direction and none of them are, by themselves, sufficient to tell us all about the physicochemical changes of swelling and solution which are the real evidences of pathologic change in a kidney or the body as a whole. The physiologists learned in the late nineties that physiologic reaction to acid intoxication nowhere parallels the hydrogen ion acidity of the acids. Even the swelling and solution of proteins does not. Fibrin will swell much in hydrochloric acid, almost as much in lactic and other organic acids and least in sulphuric. Obviously there is no association here between hydrogen ion acidity and swelling. The proteins do not follow hydrogen ion acidity in test tube experiments, and neither do they in the body. I have said all this many times before but most of my critics will not take the trouble to read what I have written. It is untrue also that alkalies in clinical cases of edema increase the edema as L. H. Newburgh first maintained. The truth is that Newburgh's clinical studies are full of error and justify none of his conclusions. To read the text of his paper leads one to believe that he had his patients on a constant regimen of food and medicine and then observed an increase in edema whenever he gave sodium bicarbonate and saw it decrease when he withheld this. Actually his printed protocols show that on the days he gave the alkali he dropped administration of digitalis and of magnesium sulphate. No wonder his patients then swelled, for to keep tissues dehydrated oxygen is necessary and no salt acts more powerfully in decreasing edema than magnesium sulphate. Obviously, to take away the cardiac stimulant and to substitute for the powerful magnesium salt the weakly dehydrating sodium salt was to favor the development of edema, and that is what Newburgh found and Dr. Marriott recites as evidence against the truth of what I have been telling you this afternoon.

DISEASES OF THE EYE FROM FOCAL INFECTIONS *

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Of all the subjects in ophthalmology, that of the etiology of ocular disease is perhaps the most interesting and important. The cause of some eye disturbances can be seen at a glance; the determination of the actual and primary cause of others requires most thorough and painstaking investigation; still other diseases run their course even to complete recovery without its having been possible to determine what the etiological factors were. Many of the causes of ocular disease have been thoroughly studied, but other just as important though apparently trivial causes have not been given the attention they deserve. Among these latter, are the various focal infections. Much has been written about the more severe metastatic infections of the eye, but only recently has the attention of the ophthalmologist been called to the milder forms of functional and organic eye disease which are produced by infections of a relatively low degree of virulence.

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* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

That certain systemic diseases are the direct result of focal infection is now generally admitted. That the list is a long one can be seen by the number mentioned by Billings in his work on focal infection; acute rheumatic fever, rheumatic endocarditis, myocarditis and pericarditis, malignant endocarditis, chorea, gonorrheal arthritis, nephritis, appendicitis, cholecystitis, gastric and duodenal ulcer, pancreatitis (and perhaps diabetes mellitus), erethema nodosum, herpes zoster, spinal myelitis, osteomyelitis, thyroiditis and neuritis. It is well known that many eye diseases are caused by these various systemic disorders, being therefore at least secondarily due to focal infection. But that ocular disease can also be caused solely and primarily by a focal infection which is producing no evident systemic disturbance is not so well known. That this is possible is being proved by an increasing mass of clinical evidence. An infecting focus may be located in any part of the body; by far the most frequent location is in the head, the mouth, pharynx and accessory sinuses being the favorite sities in the order named. These are also the foci most apt to cause eye disease; but, without doubt, more distant foci can and do produce eye disturbances, the cause in these cases being often attributed to disturbances in metabolism, changes in the internal secretions, etc.

The focus of infection may be primary or secondary, single or multiple. It may exist for years without causing any systemic or local manifestation whatever; or it may be actively disseminating toxins and bacteria of varying degrees of virulency. The ocular disturbances that result may be caused by reflex nerve irritation, especially when the focus is innervated by a branch of the fifth cranial nerve; or hematogenously, the blood stream conveying bacteria and toxins, or by contiguity of tissue, when, for example, a neighboring sinus is affected; or mechanically, by displacement of the eyeball or by pressure on its nerves or vessels.

The reflex irritation may cause photophobia, lacrimation and asthenopia, both muscular and accommodative. Hematogenous infection may cause inflammation, acute or chronic, mild or severe, continuous or recurrent, exudative or purulent, depending on the amount and virulence of the infecting organism or toxin disseminated and upon the degree of susceptibility of the tissues affected. The favorite sites for the lodgment of organisms within the eyeball are the ciliary body and the choroid in the neighborhood of the disk; but any part of the eyeball or its adnexa may be invaded. The susceptibility to ocular infection varies greatly, being increased without doubt by traumatism, eye strain and debilitating constitutional disease. The delayed infection of an eye that has been wounded or operated upon and perhaps even the occurrence of sympathetic ophthalmitis may thus be accounted for.

A list of the ocular diseases that have been observed as a result of focal infection would include almost all that are usually met with. Affections of the iris, ciliary body and choroid seem most common. Endogenous conjunctivitis has been noted, that due to the gonococcus having received the most attention in the literature. Scleritis and episcleritis occur and affections of the optic nerve have been noted. Suker recently reported a unilateral retrobulbar neuritis unquestionably due to tonsillar infection. I believe, however, that only the severer ocular diseases produced by focal infection have been generally recognized and that many of the milder but almost as distressing conditions have been overlooked.

In reporting the following cases, it is my desire to bring to your attention some of my experiences with cases of this kind, not so much with the idea of proving that these conditions resulted solely from the focal infections found, but rather to cause you to give this important part of the subject the consideration and thought that I believe it deserves. While from a clinical standpoint these cases leave nothing to be desired, I feel that pathologically I am not justified in drawing definite and positive conclusions, since the necessary bacteriological and other research requirements could not be met. I will say, however, that I have selected these cases because all of the usual methods employed in arriving at a diagnosis were resorted to, including, where indicated, Wassermann and tuberculin tests, radiography, repeated examination by competent physicians and specialists. All the patients were under observation for a sufficiently long time and were seen and examined frequently enough to enable me to become perfectly familiar with their constitutional peculiarities. Needless to say, the eye conditions were carefully attended to and exact and repeated corrections were made of the errors of refraction.

CASE I.—Asthenopia. Female, aged 48, was under observation eight years. During this time, she suffered from weak eyes, being unable to read or sew more than a few minutes without pain and lacrimation. This condition, while not constantly present, became more and more troublesome in spite of all treatment. Being one of the few cases that failed to receive benefit from glasses, no effort was spared to find a satisfactory correction for her low hyperopia and hyperopic astigmatism with presbyopia but without result. Finally after six years, during which time all dental examinations had been reported on negatively, she was prevailed on to have a radiographic examination made of the teeth and periapical abscesses of both right and left upper first molars were discovered. Extraction of the diseased teeth resulted in marked improvement within two months and at the present time, two years later, she reports that she can read or sew for hours without fatigue or discomfort.

CASE II.—Asthenopia. Male, aged 37, was under observation four years. During the first two years, frequent changes were made in the correction of a low hyperopia and hyperopic astigmatism with which he was affected but without relief of a pronounced weakness and hypersensitiveness of the eyes, no correction being comfortable more than a few months at a time. An extensive peridental abscess of the right upper jaw was then discovered which, when operated on and cured, resulted in the disappearance of all symptoms of eye trouble. Since then, no further change in his glasses has been necessary and his accommodation has become so much stronger that even though he has attained the presbyopic age, he is still able to do a large amount of near work with his distance correction without discomfort.

CASE III.—Asthenopia with marginal blepharitis. Female, aged 21, was under observation three years. A scaly hyperemia of the lid edges and an aching of the left eye after reading only a few minutes, was not influenced by any form of treatment that was carrried out during a period of two years but was cured within a month after the extraction of two left upper molars that were affected by peri-apical abscess, one of which extended into the floor of the antrum. The glasses with which I attempted to relieve her discomfort have been discarded, her moderate hyperopia with astigmatism no longer requiring the correction.

CASE IV.—Episcleritis. Female, aged 38, under observation seven years, suffered from occasional attacks of subacute articular rheumatism (so called) and frequent attacks of pain and redness of the right eye. No treatment had any permanent effect until two teeth were extracted four years later (a devitalized right upper molar and a bicuspid, both affected by peri-apical abscess); she had complete relief for a year when there was a return of the episcleritis. After two months' unsuccessful treatment, she was prevailed on to have an infected tonsil removed, whereupon the inflammation cleared up and has shown no sign of recurrence within the past two years. A + 1.00 sphere for distance to which a + 1.00 was added for reading, is now being worn with comfort, whereas previously no correction gave entire satisfaction.

CASE V.—Phlyctenular Keratitis. Patient was girl of 11, who had been under constant treatment for sixteen months. Every known method of treatment was earnestly tried but without success; corneal phlyctenules would appear and pass through the process of ulceration and cicatrization absolutely uninfluenced by any local or systemic measure. Extraction of an infected right lower first molar resulted in a prompt disappearance of the hitherto incurable photophobia and the cessation of the phlyctenular process. There has been no return within the past year.

CASE VI.—Iridocyclitis. Female, aged 55, under observation three years, when first seen, had a severe iridocyclitis of unknown origin; after several weeks, the inflammation subsided leaving the cornea nebulous and the pupil contracted, the iris being bound down by several synechiæ. Examination of the teeth and sinuses, including radiograph, proved negative. After occasional attacks of pain and redness of the left eye for a year, during which she also had several attacks of rheumatism, the right eye developed an intense iridocyclitis which lasted four weeks. When the eye cleared, vitreous opacities were discovered and the vision was found reduced to 7/60. Teeth and sinuses were again found normal. During the second year, both eyes became painful from time to time, a severe pain often passing from the eye to the roof of the mouth; rheumatic pains developed in the legs and feet. No treatment seemed to produce any beneficial result. Finally a brassy taste was noticed, apparently coming from a gold bridge on the upper left side. This bridge was removed and a devitalized molar that had been one of its supports was extracted, disclosing an apical abscess containing much foul pus. Progressive improvement has since taken place and the vision of the right eye has increased to 7/10. Only slight attacks of pain have occurred and even these are decreasing in severity.

CASE VII.—Uveitis. Female, aged 30, was under observation seven years. When first seen, the left eye showed many vitreous opacities and the posterior surface of the lens was covered with a grayish deposit at the posterior pole. Occasional attacks of redness with scattered deposits on Descemet's membrane occurred during the next four years. She then began to develop attacks of blindness, the vision which was 7/9 with her correction suddenly falling to light perception only; she described the condition "as though looking through a white cloud." After a variable time, sometimes as long as an hour, the vision would return to its former amount. These attacks of blindness became more and more frequent although the eye itself showed no change in its condition. Although careful examination of the sinuses and teeth had been repeatedly made, a radiograph made at this time showed an impacted and abscessed right upper wisdom tooth; also a left upper molar with a peri-apical abscess that extended into the antrum. Two weeks after the operation, the vision of the left eye had increased from 7/30, which had been its amount for a week previous, to 7/12 +. During the next two months she had an attack of dimness lasting ten minutes. Her left antrum was then operated on, since which time there has been no return of the attacks. At a recent examination the vitreous was found clearer, the eye quiet and the vision 7/10.

As the result of study of these few cases, and also many more not as typical, I have about come to the following conclusions: If the members of the dental profession will devote their time and energy to the caring for and prevention of diseases at the roots of the teeth with the same remarkable skill that they have displayed in correcting defects of the visible parts of the teeth, a skill which has made American dentistry supreme throughout the world; if the rhinologists in general will become still more expert in diagnosing and treating sinus and tonsillar infections; and if the general practitioner will become more resourceful in recognizing and removing all, even the mildest, foci of infection throughout the body, eye diseases of all kinds will become less frequent, and even such disturbances as are due to ocular defects will become more amenable to treatment.

Jenkins Arcade Building.

DISCUSSION

Dr. Edward Stieren, Pittsburgh: The etiology of various inflammatory disorders of the eye, especially those of the uveal tract, being so often due to focal infections from neighboring or distant diseased processes, our former views in this regard have had to be entirely revised within the past five years.

As the essayist has said, an infecting focus may be located in any part of the body and manifest itself in a secondary infection of the eye. It may be in the vermiform appendix, or a minute area at the apex of the root of a solitary tooth can prove sufficient in a susceptible individual to light up an iritis, for instance. This being the case it calls for the very best teamwork between the ophthalmologist and internist, radiographer, nose and throat specialist and dentist, to discover and eliminate the source of the ocular disease before any hope for recovery can be entertained. At the same time the general systemic diseases, syphilis, tuberculosis, diabetes, etc., have to be eliminated by the usual laboratory processes.

All this an ophthalmologist must have done in this present enlightened age, before he can conscientiously and satisfactorily treat any inflammatory disease of the bulbus oculi.

Dr. Krebs' paper is most instructive and the case histories he relates are of absorbing interest. We can all, no doubt, recall parallel instances in our own practices, but, as he so truly stated at the beginning, the most interesting and important of all the subjects in ophthalmology is the etiology.

Dr. E. B. Heckel, Pittsburgh: The dentist has finally realized that he is coming into his own; that the dental profession is being elevated to a more dignified platform than it has occupied in the past. All of this is very true, but unfortunately some of them have hallucinations of grandeur on this particular subject and they do not follow it out with the minuteness of detail that it requires. What I mean is this, that we find many dentists who, examining a mouth simply from physical appearances, will pass judgment on the condition of the teeth. Now, anyone who knows anything about it, knows that is practically impossible, so if we suspect anything of that kind in ferreting out a cause for an ocular condition, I think it is with the oculist to resort to the roentgenologist in order to have a radiogram made to determine what the condition is, and refer the patient to the dentist to have the condition corrected.

SELECTION

GERMAN PHILOSOPHY REVERTS TO BRUTE FORCE

LOGICAL TO A CERTAIN POINT, ITS FATAL FLAW IS REJECTION OF COMMUNITY PROGRESS, WHICH CONSTITUTES CIVILIZATION *

GEORGE W. CRILE, M.D.
MEDICAL OFFICERS RESERVE CORPS

We are in war, but war is only a part of that in which we are involved; we are in a revolution of the moral, social, educational, and political systems of the great human race. War is the expression of but one phase of this fateful revolution. If we are to survive and remain free, we must accurately value our own creed and the creed of our enemy, to the end that we may strengthen the foundation and augment the superstructure of our civilization.

Our enemy is guided by a definite and published philosophy. We must therefore establish and publish clearly our own philosophy. We must examine the validity of the principles for which we are contending,. as well as of those against which we are contending. We must know the truth—are we right, or is our enemy right? Is there a flaw in the premises of the German state philosophy?

Through the schools and through the universities the ideas of the German philosophers, of Nietzsche and of Treitschke, in particular, have created a state of mind peculiar to Germany. This state of mind, in which religious elements are combined with biologic concepts, is the result, in part, of the implantation of the seeds of Darwin's theory of the survival of the fittest, in the struggle for existence, upon the intensely religious German mind.

The German adaptation of Darwin's conception may be expressed as follows: In nature the strongest and the most clever species of animal is best adapted for existence, hence that species survives and its competitors perish. German philosophy assumes that, among the peoples of the earth, the Germans, collectively and individually, are the strongest and the most clever. They conclude, therefore, the the German people are the fittest to survive; and that they, therefore, have the right to exercise their higher survival qualities. In the exercise of this right they conclude that they are entitled to take from other nations, by methods of peace or of war, their land, their wealth, their very existence itself, since this is the logical right of the fittest animal engaged in the struggle for survival. The German state philosophy not only assumes the right but holds it as duty to thus extend dominion by force over other people. Comparing the migrated German individual with individuals of other stock, we hold that the efficiency of the German state is not the result of any superiority of the German stock to the Anglo-Saxon or to the Latin stock, but that it is due to the establishment of an organization in which, by a type of collective effort, the individual, to a greater degree than is true of the individual in any other state, has given up his initiative—his will—to the state, which has been governed by an able and an honest ruling class. In other words, Germany has established what she calls a Kultur, by means of which a superior state has been created out of good average human beings. Therefore, when the Germans speak of their rights as those of the fittest, they refer to their state rather than to the individuals of that state.

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* Address (abbreviated) delivered at a recent meeting of physicians and their wives, under the auspices of the New York State Committee, Medical Section of the Council of National Defense, at the Waldorf-Astoria, New York, as published in the New York Times Magazine, Nov. 25, 1917.

For the purpose of our argument, let us accept the German premise that, at this period of history, the German state is the most highly efficient—in agriculture, in manufacture, in learning, in art, in science, and in war. Now, if in the last analysis might does give right, do the inexorable laws of evolution apply to human beings as they apply to lower animals and plants? Is force right?

Nothing but force gives the wolf the right to the life of the sheep; nothing but force gives the sheep the right to the grass; nothing but force gives the grass the right to the soil. On the basis of evolution alone, what gives man the right to take the milk from the cow or the wool from the sheep? What gives man the right to enslave animals; to kill millions of animals without their consent—not for their good, but for the good of man? What gives man the right to occupy the earth so completely to the disadvantage of many other worthy animals? *Force* and the ability to use that force to the advantage of man—that is the exercise of man's qualities of fitness. What gave our forefathers the right to dispossess the American Indian of a continent, not for the good of the Indian, but for the good of our ancestors; not at the request, nor with the consent of the Indian, but by the exercise, on the part of our ancestors, of greater fitness to survive? Within the period of history we have seen weaker races yield to stronger, fitter races. There is evidence that this occurred even more strikingly in prehistoric ages.

Does it, then, follow that the German state is justified in exercising its superior fitness for survival against its less fit neighboring states? The German premise is this—Germany has established the fittest state for survival; Germany, therefore, has the right to exercise her survival faculties.

If this premise can be proved, then Germany is right; and this premise will be proved to be either true or false. It will be proved, not by theoretic considerations, but by the verdict of the present struggle. If the German wins permanently, then his premise becomes an established fact, and the German philosophers are right. The German supremacy would then be established, just as one species of plants or animals establishes its supremacy over another species when it migrates into the territory of the other. Evolution has always declared the victor to be right, and the present status of the numerous plants and animals that now occupy the earth is right, because of the exercise of their superior fitness to survive.

In the German premise, might is synonymous with fitness to survive. It is the fittest that survives, and it is true in nature that, in most instances, the fittest are the mightiest. This is true of most plants, of most trees; it is true of most animals. But it is equally true that some of the mightiest animals have proved less fit in the struggle than their competitors with other qualities. Even among the lower animals might does not always win.

The German philosopher, however, may say that intellectual might is as important as muscular might. This is true, and if Germany loses the present struggle it will not be because of a lack of physical or intellectual force or for want of cooperation or sacrifice of her people, but for another reason equally potent and based on the same biologic principle.

Let us recall the qualities that have enabled man to struggle successfully with other competing species. Compared with the animals over whom he has established his supremacy, man is not so strong, he is not so fleet, he is not so prolific, he is not so well equipped with means of defense or with means of offense. Compared with certain of these animals he is inferior in muscular power, in the sense of smell, of hearing, of sight, of touch, and in his means of protection against cold and heat and rain. He is less protected against disease and he is shorter lived. Man has no protecting carapace. He has no repellent odor. He has no sharp claws and no powerful teeth. He climbs a tree awkwardly. He is timid in water. In each of his several physical qualities he is outclassed by many animals.

If survival depended only upon might, a band of powerful gorillas would prevail over any band of men, just as the keen senses, the powerful limbs, the prowess of the lion have made him the ruler over less powerfully equipped animals.

As the fierce struggles during the evolution of animals progressed, man rose rapidly through the development of his master organ of strategy—the brain—and the evolution of his hands. In his brain was found the efficient substitute for teeth and claws, for fleetness and for keen senses.

Thus, in time, the caveman, the bushman, and the tribe developed.

Up to this point there is no flaw in the German logic, for, up to this point, the mightiest family and the mightiest tribe were right.

These primitive ancestors, however, were able to dominate but a limited environment; they barely held their own against many competing animals. In time certain momentous developments in the vast history of man occurred, viz., the discovery and control of fire, the cultivation of useful plants, the domestication of animals, the manufacture of simple tools. With these advances there developed an increasingly rapid control over the forces of nature and the human race began to multiply more rapidly. Instead of running away or fighting with his muscles, man learned more and more how to circumvent his enemies. One after another, useful additions were made to man's reactions, which, in turn, were augmented by his children.

As the means of controlling the forces of nature increased in number and as the handicraft and the machinery became more numerous and more nearly complete, as the work of man became more specialized and his needs more complex, he became increasingly dependent upon his fellows. Gradually there developed the most dominating of all the adaptations of man—the community adaptation—community behavior. The primary community reaction is cooperation through the division of labor with the exchange of the products of labor. This was the origin of justice. There could arise no code of laws among naked fruit-eating natives. With the railways and telegraphs, with the unfolding of physics and chemistry, with discovery and invention, man became increasingly dependent upon his fellow-men, and the principles of justice and mutual dependence became correspondingly intensified.

Thus it came to pass that those people were fittest who became the most completely adapted to gregarious life, viz., those who were most truthful and honest, just and diligent.

Primitive individualistic reaction, nevertheless, as against community reaction, still appeared; in fact, it appears frequently even now. This is the origin of selfishness, of stealing, of killing, etc. The community punished the individualistic—the selfish reactions—through cooperation, just as the community secures a living through cooperation.

As an adaptation against the strong individualistic selfish reactions, religions have been evolved. The great success of the teachings of Christ, of Buddha, of Mohammed, of all religious leaders, is due to the fact that fairness and honesty and justice are the foundations of community prosperity. Religions aim to develop altruism in their adherents—their duty to the race as well as to themselves. The greater the extent to which a people react to the good of the race the fitter are they to survive.

If an individual unjustly takes through stealth or by force what belongs to his neighbor, if he slays his neighbor, a protective reaction is awakened in the community against that individual. He is isolated from his fellows. He may even be killed for the general good, because he is unfitted for the community stage of evolution. But he is fitted for the life of the lower animals, the life of primitive man.

The individual who is most fair and just, most useful to his race—that individual is most fitted to survive. The successful dominance of the earth by man is due to the fact that, through experience, through religion, through training by parents and fellow-men, the majority of human beings strive to make the race better and to strengthen the bonds of social cohesion, or at least they do not strive to destroy social cohesion.

If nations are only multiples of individuals, if what is true of the individual is true of the nation, then we may find in this a possible flaw in the premises of the German state philosophy. If the same standard is applied to the state as to the individual, then Germany is less fit to survive than many other nations, because she has returned to the individualism of the lower animals and primitive man, reacting among the nations as the individual robber and the individual murderer reacts within the nation. Therefore, she awakens a protective reaction in other nations. Other nations must deal with her as a nation as they deal with individual robbers and murderers.

This individualistic German reaction interferes with the progress of the human race just as the robber and the murdered interfere with local progress within the state. The individual is punished so that his neighbor may live. Unfit Germany must be punished so that the human race may live; that, through altruism, it may maintain and increase its fitness to occupy the earth.

Now that Germany has put its state philosophy in the crucible, she finds that the world is against her. The nations are opposed to Germany for the same reason that the individuals of a community are opposed to a robber and a murderer. Germany is attempting to impose upon the world by force an altruism, for herself alone, based on force, against an altruism, for the entire human race, of modern religion based on simple justice. These two contradictory principles are contending for survival. If Germany achieves her aim—that is, if Germany conquers the world—then Germany's philosophy of force will be imposed upon the world. The men, the women, and the children of the world will then be governed by the state philosophy that one nation should prosper by the labor of the people of another nation; they will be governed by the belief that this state, highly adapted to conquer others by force, should exercise that force to the advantage of themselves alone. They are the wolf—we the sheep.

If the German philosophy should prevail, and, after the world was deluged in blood, broken, and impoverished, we should awake to find ourselves a part of such a state, what would happen?

First, there would be no alien peoples, hence there would be no states left to plunder. Germany's Kultur would then be obliged to earn its own living. Her state philosophy would then meet its first fallacy.

Again, when Germany has imposed her will upon the world, when she has achieved her super-Armageddon, when she has crushed to earth all opposition, then she will find herself without foes, without rivals. Without dangerous rivals the people of the state do not give up their will to the state. A military autocracy can be achieved only in the face of danger. Should Germany conquer all her enemies, she no less completely conquers the source of her own autocratic power. She would then be in the position of a cancer that had killed the body on which it fed. It what state, then, would the world find itself? To what previous cycle of history would this correspond? Force is not the source of state power that can endure; it is raised only to fall.

Even if Germany conquers the world by force, then she will not yet have proved her philosophy to be right, for the complete control of the individual by the state is made possible only by the presence of powerful neighbors or by neighbors who are feared by all the people of a state. In order to secure safety the individual gives himself to the state. It is only a normally weaker state that fears its neighbors; therefore, a Kultur such as the German Kultur can arise only in a state weaker in resources and in numbers of inhabitants than its rivals. The lesser state then strives for its permanent safety by destroying and by conquering its neighbor. When attacked by the highly organized state, the larger but inefficiently organized state is then subjected to the same stimulus to development. The unorganized people then become stronger. The Kultur state can grow no stronger;

hence, sooner or later, there will tend to be a balance of power established in favor of the larger state.

We must conclude, therefore, that the German philosophers have been reasoning from false premises. This conclusion is supported not only by the tenets of religion and biology, but by history and by an examination of the sources of national strength—the fitness of other nations. History tells us that attempts to rule by force as against justice have always failed, either by awakening the self-protective reactions in many contemporary powerful nations, or when a people have been brutalized into submission by the degeneration of both the conqueror and the conquered. It will follow that whether the German state wins or loses this war, it stands to lose ultimately.

The ephemeral success of state power based on the supreme right of the state contrasted with the lasting success of moral power based on the rights of the individual, as exemplified by the long reign of religions and of moral codes, is one of the outstanding facts of history. The greatest source of power is that which comes spontaneously and justly from the individual; that which requires a minimum of state power in order to mobilize it. The least source of power is that which is compelled by the state, because from the power of the individual must be subtracted the effort of the state to extract that power. The net result, therefore, is less under coercion than under voluntary performance.

Viewed in this light, one may readily understand why the state philosophy of Germany has failed as a colonizer, and why, with their opposing individualistic philosophy, the liberal powers succeed as colonizers. Formal submission may be compelled, but the seeds of discord grow in the damp shade of hate.

A short cycle of success with maximum unhappiness may be achieved by a state through the exercise of sheer force. The longer cycles of success with the maximum of happiness have been and probably will be secured by a state through the philosophy of the individual as expressed by religion and by moral codes. If the Allies fail in the history of today they will succeed in the history of tomorrow. If Germany succeeds in the history of today, Germany will fail in the history of tomorrow. Rather than to share the common fate of passing through the stunting cycle of disintegration following a present German success, it were better that we all now perish gloriously on the battlefield.

In spite of the fallacy of the German philosophers, they have, nevertheless, established in the German people action patterns of such surpassing strength that in the organized intelligence of the German people is our greatest menace. In fact, the present war is a contest of ideas rather than of men. In its broadest sense, it is the practical application of physics, chemistry, and biology in a mass struggle for the existence of nations.

The battle itself is the applied science of killing; survival is the result of knowledge supplied by a nation. Therefore it would appear that those who plan methods of destruction through the use of physical and chemical forces will profit by the viewpoint of those who have special knowledge of the effects of those forces on man and other animals, viz., men with an expert working knowledge of physics, chemistry, and biology.

Research and medicine and biology should not be limited to saving and repairing the wreckage, but should be directed also toward the methods of killing the enemy. To accomplish these ends a cohesion of scientific talents is essential. So long has Germany commandeered the talents of her universities and the intellect of her nation that the menace of Germany is giving the best intellects of her nation every facility and a forced draft to produce ideas.

If we expect to win we must meet discovery with discovery; we must meet loss with greater sacrifice; we must concentrate our business talent, our engineering talent, our medical talent, all our talents, on our battle line. Our universities and our laboratories must become our first line of trenches. Our universities should constitute the foundation of our national defense—our schools, the exponents of our creed of liberty.

SUBSTITUTES FOR SUGAR

SUGAR AT PREVAILING PRICES CONSTITUTES LEAST EXPENSIVE FOOD—USE OF SACCHARIN PROHIBITED

An article appearing in a recent issue of the *Weekly Bulletin* of the Department of Health of the City of New York calls attention to the fact that sugar is not merely a sweetening agent, but is a highly concentrated fuel food and one which is very readily utilized by the body.

Sugar is a carbohydrate, and the following interesting table, taken from the *Bulletin*, as are also the notes following, shows that even at the existing high prices sugar is one of our least expensive foods:

Corn starch	at 10c a pound	furnishes	160 calories for 1 cent
Rice	at 11c a pound	furnishes	145 calories for 1 cent
Molasses	at 25c a quart	furnishes	107 calories for 1 cent
Potatoes	at 3c a pound	furnishes	100 calories for 1 cent
Dried raisins	at 15c a pound	furnishes	95 calories for 1 cent
Dried apples	at 15c a pound	furnishes	90 calories for 1 cent
Prunes	at 16c a pound	furnishes	80 calories for 1 cent
Canned corn	at 21c a can	furnishes	25 calories for 1 cent
Sugar	at 10c a pound	furnishes	180 calories for 1 cent
	at 11c a pound	furnishes	165 calories for 1 cent
	at 12c a pound	furnishes	150 calories for 1 cent
	at 13c a pound	furnishes	140 calories for 1 cent
	at 14c a pound	furnishes	130 calories for 1 cent
	at 15c a pound	furnishes	120 calories for 1 cent
	at 20c a pound	furnishes	90 calories for 1 cent

To a considerable degree fat can also be substituted for sugar as a fuel food. While the cost of the fats, as a class, is apparently high, per pound, the food value expressed in calories is also high, so that they really constitute an economical source of fuel food. Thus—

Salad oil (cottonseed oil) at 35 cents a pint furnishes about 200 calories for 1 cent.

Oleomargarine at 30 cents a pound furnishes about 115 calories for 1 cent.

USE OF SACCHARIN PROHIBITED

So far as the use of sugar as a sweetening agent is concerned, it is important to warn against the use of saccharin as a substitute for sugar. Saccharin is a coal-tar derivative possessing no food value whatsoever. Moreover, the continued use of saccharin has been known to interfere with digestion. Even in France, at the present time, where the supply of sugar is very much restricted, regulations have been adopted to prevent the use of saccharin in preserves, stewed fruits, cakes, household drinks, etc. In no case should saccharin be used in the food of children, invalids, or the aged and infirm.

In New York City the sanitary code forbids the use of saccharin in foods or drinks sold in the city. This section of the code was attacked in the courts not long ago, but the attitude of the department of health was sustained.

THE PENNSYLVANIA MEDICAL JOURNAL

Published Monthly Official Organ of the Medical Society of the State of Pennsylvania

CYRUS LEE STEVENS, A.M., M.D., Editor

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CRAWFORD—Cornelius C. Laffer, M.D., Meadville.
CUMBERLAND—Calvin R. Rickenbaugh, M.D., Carlisle.
DAUPHIN—Alfred P. Isenberg, M.D., Harrisburg.
DELAWARE—Walter E. Egbert, M.D., Chester.
ELK—Jacob K. Levan, M.D., St. Marys.
ERIE—T. M. M. Flynn, M.D., Erie.
FAYETTE—Arthur E. Crow, M.D., Uniontown.
FRANKLIN—John J. Coffman, M.D., Scotland.
GREENE—Thomas B. Hill, M.D., Waynesburg.
HUNTINGDON—Cloy G. Brumbaugh, M.D., Huntingdon.
INDIANA—Harry B. Neal, M.D., Indiana.
JEFFERSON—John H. Murray, M.D., Punxsutawney.
JUNIATA—William H. Banks, M.D., Mifflintown.
LACKAWANNA—Arthur E. Davis, M.D., Scranton.
LANCASTER—Walter D. Blankenship, M.D., Lancaster.
LAWRENCE—William A. Womer, M.D., New Castle.
LEBANON—George R. Pretz, M.D., Lebanon.
LEHIGH—Thomas H. Weaber, M.D., Allentown.
LUZERNE—Lawrence A. Sheridan, M.D., Wilkes-Barre.
LYCOMING—Wesley F. Kunkle, M.D., Williamsport.
McKEAN—James Johnston, M.D., Bradford.
MERCER—Frank Bleakney, M.D., Grove City.
MIFFLIN—Paul M. Allis, M.D., Lewistown.
MONROE—William E. Gregory, M.D., Stroudsville.
MONTGOMERY—Benjamin F. Hubley, M.D., Norristown.
MONTOUR—Cameron Shultz, M.D., Danville.
NORTHAMPTON—Walter D. Chase, M.D., Bethlehem.
NORTHUMBERLAND—Horatio W. Gass, M.D., Sunbury.
PERRY—E. Kenneth Wolff, M.D., Ickesburg.
PHILADELPHIA—Samuel McClary, 3d, M.D., Philadelphia.
POTTER—Elwin H. Ashcraft, M.D., Coudersport.
SCHUYLKILL—George O. O. Santee, M.D., Cressona.
SNYDER—R. W. Johnston, M.D., Selins Grove.
SOMERSET—H. Clay McKinley, M.D., Meyersdale.
SULLIVAN—Carl M. Bradford, M.D., Forksville.
SUSQUEHANNA—Dever J. Peck, M.D., Susquehanna.
TIOGA—Harry C. Harkness, M.D., Mansfield.
UNION—William E. Metzger, M.D., Alvira.
VENANGO—J. Irwin Zerbe, M.D., Franklin.
WARREN—Ira A. Darling, M.D., Warren.
WASHINGTON—John B. McMurray, M.D., Washington.
WAYNE—William T. McConvill, M.D., Honesdale.
WESTMORELAND—Ellsmer L. Piper, M.D., Export.
WYOMING—Herbert L. McKown, M.D., Tunkbannock.
YORK—Charles H. May, M.D., York.

All communications should be addressed to the PENNSYLVANIA MEDICAL JOURNAL, Athens, Pa.

The Medical Society of the State of Pennsylvania does not assume responsibility for any statements or opinions published in this Journal.

ATHENS, PA., JANUARY, 1918

PESTILENCE FOLLOWS WARS

DO NOT NEGLECT VACCINATION

The time is opportune for the medical profession to warn people to be vaccinated against smallpox. Periods of absence of this disease are prone to be accompanied by a relaxation of vigilance, with the result that a considerable. unvaccinated population grows up. Such a population constitutes vulnerable material for the infection of smallpox and creates a condition favorable to the spread of an epidemic. A considerable amount of smallpox is now prevalent in various parts of Pennsylvania. This smallpox appears to be of the relatively mild type which had its origin in Florida in 1896. This strain of smallpox was doubtless produced by an attenuated parasite, which gave rise to a form of the disease less fatal and likewise less infective. A single vaccination performed even many years before is usually protective against this type of the disease.

Of greater importance is it to protect the population against the introduction of a malignant strain of smallpox from abroad. The intermingling of the Orient and the Occident in this war is very apt to introduce from the East a malignant strain of smallpox which may readily spread over the entire world. It will be recalled that after the Franco-Prussian war in 1871 the most widespread and malignant pandemic of smallpox known to the world ravaged the countries of Europe and America. The infection appears to have been introduced into Germany by a French prisoner and soon spread like wild fire throughout Germany. The mortality in the German army was small owing to the fact that it had been thoroughly vaccinated. The French army, however, was poorly vaccinated and is estimated to have lost over 23,000 men. In the city of Philadelphia alone during 1871-72 there were 15,629 cases. Smallpox varies very greatly in malignancy in different epidemics. The type of smallpox which prevails in Japan, China and the East is far more virulent than that which has recently existed in this country. The rapidity of ocean travel makes it quite possible for an individual to be infected in Russia and fail to develop symptoms until after he has landed in the United States. If the spark of infection is introduced, the presence of inflammable material may lead to a general conflagration. The only safe measure is to make the population insusceptible to smallpox.

There is a duty incumbent on physicians in connection with vaccination to so carry out this procedure as to make it safe and free of any consequent wound infections. The accidents after vaccination that have been from time to time reported are, to a considerable degree, due to failure on the part of physicians to impress parents with the fact that vaccination produces a wound on the skin and that this wound requires such after-care as would be bestowed on a surgical wound. The physician's responsibility does not end with the mere insertion of the virus into the skin. Much of the opprobrium which has been cast on vaccination could have been avoided if physicians generally had recognized this fact. A vaccinated person should be seen by the physician on several occasions during the course of the vaccination in order to make sure that the wound is properly treated and that no untoward phenomena develop. There would be no opposition to vaccination if this course was universally followed. Physicians should advise the vaccination of all unvaccinated individuals, but they should protect the patient, themselves and the reputation of vaccination by giving to the after-treatment the attention which it deserves. J. F. S.

EXCESSIVE USE OF TOBACCO IN THE ARMY

Whether alcohol is food or drug, whether stimulant or sedative, may be considered a debatable matter, and evidence can be marshaled in favor of either view. The question is somewhat a relative one, partly quantitative, partly qualitative. An agent that in one form or another has received the sanction of usage throughout all time cannot be wholly without virtue or value, even though it be at the same time capable of deleterious effect. The question in reality is partly one of dosage and of individual susceptibility. While small amounts of alcohol may do no harm, and perhaps may do good, large amounts, especially if taken frequently, are quite sure to give rise to bad results, immediate and remote. Personal idiosyncrasy no doubt plays a not unimportant part. Practically, therefore, alcohol should be kept in the category of drugs, in the materia medica, and not be used indiscriminately or according to lay selection, any more than ether or chloroform or opium or other drug capable both of good and of evil, and whose administration and dosage require special intelligence and judgment.

Now, something of the same sort of argument is applicable to other substances, and even to certain articles of food, though perhaps in not just the same degree. It is an all too familiar fact that excesses or indiscretions in diet are fruitful causes of physiological derangement and physical discomfort, if not of actual structural alteration. In this category belong other things also—tea, coffee and tobacco. These are used so universally that a recommendation for their suppression would meet at once with widespread disfavor. Yet it will not be denied that their excessive employment often brings about conditions sometimes of a disturbing or even alarming, if not a dangerous, character, and requiring medical intervention.

We are moved to the foregoing remarks on account of the increasing, and to our mind excessive, use of tobacco in the armies at present engaged in the unhappy and devastating conflict in which the entire world is involved, directly or indirectly. The men at the front, in the trenches, in the camps, and especially the hospitals, are entitled to every consideration and every comfort that it is possible to provide for them. They are bearing the burden of civilization, and it is for those that remain behind, and whose safety these men have gone out to protect and assure, to lighten that burden as much as possible.

Tobacco is to most men an agreeable sedative, and, used in moderation, it is likely to cause little or no harm. The same statement, however, cannot be made of its excessive use, and there is reason to believe—nay, the evidence is obtrusive for anyone who has had opportunity to observe—that there is a larger use of tobacco among soldiers, officers and men alike, than is good for their physical welfare and their military efficiency. The effects can be seen especially in the heart and vascular system, which normally are subjected to unusual stress and strain by the necessities of military discipline and activity, and whose functions are readily deranged by the shock and violence of battle.

The action of tobacco, especially in those abnormally susceptible to its effects, and particularly if used in large amounts, is to induce cardiac irritability and increased arterial pressure, not to mention the deleterious influence on the digestive and respiratory tracts. When all of these ulterior forces become operative it can readily be seen that serious results may follow from the overuse of what is intended as a measure of comfort to a noble body of men in extraordinary surroundings, making the greatest sacrifice that can be asked, and who are entitled to the utmost that can be given them.

We have no wish that the men under arms should be deprived of their tobacco, but we wonder if it would not be the part of kindness and of wisdom, if it be possible, to attempt some restriction of its use, not necessarily by mandatory measures, but by the more persuasive and reasonable method of moral suasion and the appeal to reason. It would be too much, of course, to ask that the same proscription be made against tobacco as has been made against alcohol, but it may be worth while to sound the note of warning in order that what is at present an indulgence may not become a vice and an evil, and impair our military efficiency and our chances for success in the enormous conflict in which we are engaged. E.

THE COUNTY SOCIETIES AND 1918

The war has already interfered to a certain extent in the work of some of our county societies by taking away the president or secretary in some cases and some of the more active members in every county. This is, however, a time for loyalty to our country, and that means loyalty to our county society and the entire medical organization. Surgeon-General Gorgas is authority for the statement that organized medicine has given more aid than any other civilian agency to America's successful activities thus far in the war.

The county societies are starting the year with new presidents and in some cases with new secretaries and other officers. Each officer should determine to make 1918 the best year in the history of his society. Every member should be urged promptly to pay his dues, and he should good naturedly be followed up until he does renew his membership even if it take the whole year to do it. Every eligible physician in the county should be invited and urged to join the society. The meetings should be made so interesting that every member will wish to attend. Write your councilor and ask him to visit your society at an early date.

Plan for at least one public meeting during the year. Have a live program, with tactful and capable speakers, and show the public what organized medicine is doing for the community and for the country. Do not "knock" at quacks, unlicensed practitioners and patent medicines, but, rather, quietly show how they are detrimental to the public more than to the medical profession. Show the value of animal experimentation, of vaccination, of health conservation and of having a uniform standard for all who wish to enter the practice of medicine in any of its departments. Show the cost to the community of tuberculosis, typhoid fever, whooping cough, measles and venereal diseases. While showing that these diseases are largely preventable, it can be shown incidentally that the doctors in working to limit these and other diseases are really cutting off their own means of subsistence.

THE STATE SOCIETY AND 1918

On pages vii and viii there will be found a list of the officers and committeemen of the Medical Society of the State of Pennsylvania. If our names appear there once or more than once, let us think it over until we realize our responsibilities even more than we do our honors and privileges. There is certain work that we officers and committeemen must do if the interests of the profession and of the people are to be protected and advanced. We do not wish to be classed as slackers. The year in some respects will be a hard one for all organizations, but there must be no falling off of interest or work for our medical organization. Rather, there must be a rallying to the support of county, state and national societies. The officer or committeeman who wishes to present a good report at the Philadelphia Session next September needs to begin his thinking and his working at once, the sooner the better. One third of the society year has already passed. Each officer and committeeman was elected or appointed because it was thought that he was the man for the place. Is Dr. So-and-So, are you, am I going to fill the bill?

"A chipped dish is unsightly, but a cracked one is a menace. The chipped places may be readily scalded or sterilized. The cracks hold whole colonies of germs which would be glad to dance at your funeral."

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported up to December 22:

Allegheny County: *Deaths.*—Charles O. Goulding (Bellevue Hospital Med. Coll., '87) in Pittsburgh, November 27, from pneumonia, aged 58; Frederick P. Ransom (Jefferson Med. Coll., '04) in Pittsburgh, November 19, aged 37. *Removals.*—Robert B. Armstrong from Pittsburgh to 535 Frances Bldg., Sioux City, Iowa; James M. Miller from McDonald to Hickory (Washington County); Charles Scofield from Bakerstown to Rock Creek, Ohio.

Berks County: *Death.*—Clarence M. Kurtz (Jefferson Med. Coll., '86) of Reading, in Old Ferry, November 25, aged 56.

Bradford County: *New Member.*—Russell Harrison Person, Burlington.

Bucks County: *Death.*—John Jacob Ott (Univ. of Pennsylvania, '77) in Pleasant Valley, November 22, from chronic nephritis and valvular lesion of the heart, aged 66.

Columbia County: *Removal.*—William T. Vance from Bloomsburg, R. D. 6, to Orangeville.

Crawford County: *New Member.*—Walter H. Cowan, Mosiertown.

Fayette County: *New Members.*—Don D. Brooks, Connellsville; Samuel C. Dowds, Dunbar.

Lackawanna County: *Transfer.*—Oscar J. Mullin to Wayne County Society. *Removal.*—Thomas G. Killeen from Scranton to Carbondale.

Lancaster County: *Death.*—Amos H. Helm (Jefferson Med. Coll., '68) in New Providence, December 8.

Lawrence County: *New Member.*—Samuel Warner, New Castle.

Lehigh County: *Death.*—Abraham P. Fetherolf (Bellevue Hospital Med. Coll., '65) in Allentown, November 23, aged 74.

Luzerne County: *New Member.*—Charles J. Higgs, Wilkes-Barre. *Removal.*—Frank Paul Summa from Nanticoke to 104 Maple St., Kingston.

Lycoming County: *New Member.*—Fuller S. Derr, Watsontown (Northumberland County).

McKean County: *Removal.*—Harry C. Winslow from Norwich to 883 Water St., Meadville (Crawford County).

Monroe County: *Removal.*—Eugene A. Shupp from Kunkletown to 1151 North Ninth St., Reading (Berks County).

Philadelphia County: *Withdrawal.*—George E. Levis. *Deaths.*—D. Howard Johnston (Hahnemann Med. Coll., Philadelphia, '83) in Philadelphia, November 9; Joseph Mark Malatesta (Jefferson Med. Coll., '86) in Philadelphia, November 22, from disease of the kidney, aged 58. *Removal.*—Annie Young from Montreal, Canada, to 2121 North College Ave., Philadelphia.

Wayne County: *New Member.*—Oscar J. Mullin, Hamlin (by transfer from Lackawanna County Society).

Westmoreland County: *New Members.*—Samuel P. Boger, Derry; Edwin L. Nesbit, Greensburg; James A. Schurgot, Monessen.

York County: *Death.*—Edmund W. Meisenhelder, Sr. (Jefferson Med. Coll., '68), in York, recently, aged 74. *Removal.*—Milton Dunnick from Shrewsbury to Jerome (Somerset County).

PAYMENT OF PER CAPITA ASSESSMENT

The *per capita* assessment for the year 1917 has been received from component county societies since November 21, as acknowledged on page 193 of the December Journal, as follows:

Dec. 1,	Fayette	121–122	6904–6905	$5.50
Dec. 24,	Clearfield	70	6906	2.75

The *per capita* assessment for the year 1918 has been received from component county societies as follows:

Oct. 25,	Wayne	1–8	1–8	$ 22.00
Nov. 15,	Bradford	1–10	9–18	27.50
Nov. 16,	Montgomery	1	19	2.75
Nov. 22,	Bucks	1–40	20–59	110.00
Nov. 23,	Venango	1	60	2.75
Nov. 30,	Juniata	1	61	2.75
	Lycoming	1–2	62–63	5.50
Dec. 1,	Luzerne	1	64	2.75
Dec. 5,	Somerset	1–7	65–71	19.25
Dec. 7,	Blair	1–13	72–84	35.75
	Northumberland	1–3 *	85–87	
	Northumberland	4–7	88–91	11.00
	Columbia	1	92	2.75
Dec. 8,	Westmoreland	1–13	93–105	35.75
Dec. 10,	Crawford	1–6	106–111	16.50
	Lawrence	1–3	112–114	7.25
	Montgomery	2–7	115–120	16.50
Dec. 13,	Wayne	9–11 *	121–123	
Dec. 15,	Wyoming	1–8	124–131	22.00
Dec. 17,	Beaver	1–4	132–135	11.00
Dec. 21,	Blair	14–22	136–144	24.75
	Wayne	12–15	145–148	11.00
Dec. 22,	Columbia	2–15	149–162	38.50
Dec. 24,	Wayne	16	163	2.75
	Delaware	1	164	2.75
Dec. 26,	Adams	1–6	165–170	16.50
	Adams	7*	171	
	Franklin	1, 6–7	172–174	8.25
	Franklin	2–5*	175–178	
	Somerset	8	179	2.75
Dec. 28,	Wyoming	9–10	180–181	5.50
	Bradford	11–14	182–185	11.00
	Northampton	1–15	186–200	41.25
	Northampton	16–17*	201–202	

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* Dues remitted.

STATE NEWS ITEMS

MARRIED

Dr. William Howard Eister, Sunbury, and Miss Amelia Kublic Sagon, at Shamokin, November 7.

Dr. Francis E. Drumheller and Miss Ella Kirkpatrick, both of Sunbury, in Philadelphia recently.

Dr. Charles S. Pancoast, Camden, N. J., and Miss Minnie Loretto Percell, New York, in Philadelphia, November 28.

DIED

Dr. Charles Stewart (Miami Univ., Ohio) in Easton, December 18, aged 87.

Dr. Daniel G. Rowley (Univ. of Pittsburgh, '91) in Culmerville, November 20, aged 59.

Dr. William Huber Hoffa (Medico-Chirurgical Coll., '04) in Benton, November 11, aged 36.

Dr. Moses Knapp (Philadelphia Coll. of Med. and Surg., '54) in Gwynedd, November 18, aged 77.

Dr. Quintus L. Adams (Jefferson Med. Coll., '88) in Philadelphia, November 27, from pneumonia, aged 51.

Dr. William Henry Keim (Hahnemann Med. Coll., Philadelphia, '71) in Philadelphia, November 23, aged 74.

Dr. Howard A. Underwood (Hahnemann Med. Coll., Philadelphia, '73) in York Springs, November 17, aged 74.

Dr. Joseph M. Gerhart (Hahnemann Med. Coll., Philadelphia, '68) in Philadelphia, November 19, from pneumonia, aged 71.

Dr. Isaac Riley Bucher (Pennsylvania Med. Coll., Philadelphia, '57) in Lebanon, November 23, from pneumonia, aged 85.

Dr. Albert A. Norris (Hahnemann Med. Coll. and Hosp., Philadelphia, '87) in Philadelphia, November 24, from nephritis, aged 64.

Dr. William Alexander Armstrong (Philadelphia Univ. of Med. and Surg., '61) in Philadelphia, November 22, from heart disease, aged 77.

Dr. Daniel P. Gerberich (Hahnemann Med. Coll. and Hosp.. Philadelphia, '81) in Lebanon, November 29, from a complication of diseases, aggravated by a fractured hip, aged 62.

ITEMS

Dr. Robert W. Brady, Honesdale, is spending the winter at Daytona, Fla.

Major W. Wayne Babcock is now chief surgeon and director of the base hospital at Fort McPherson, Atlanta, Ga.

The Germantown Hospital and Dispensary has received a bequest of $100,000 by the will of the late Mrs. Mary Warden.

Dr. Robert F. Ridpath, Philadelphia, has been elected otologist to the Jewish Hospital, Philadelphia, to succeed Dr. Eli Klopp, deceased.

Dr. W. W. Keen, Philadelphia, who has served ten years as president of the American Philosophical Society, has declined renomination.

Dr. Fulton R. Stotler, Wilkinsburg, has resigned as a director of the board of education of that place, after a service of twenty-eight years.

Smallpox.—There were on December 18 seventy-two cases of smallpox in Pennsylvania, mostly in Cambria, Clearfield and Lancaster counties.

Instruction to Mothers of Babies will be given daily at the Woman's College Hospital baby clinic under charge of Dr. Lida Stewart Cogill.

The Hahnemann and St. Luke's Hospitals, Philadelphia, each receive a bequest of $30,000 by the will of the late Dr. William H. Keim.

The Jefferson Medical College Alumni Association receives a bequest of $10,000 by the will of the late Dr. Joseph M. Malatesta of Philadelphia.

Lieut. G. Franklin Bell, M. R. C., U. S. Army, Williamsport, who has been ill at the cantonment camp, Greenville, S. C., is reported to be convalescent.

First Lieut. H. Cotter Boyle, M.D., attached to the British Forces was wounded during the German attack of November 30 in the region of Gouzeaucourt.

Lieut. James R. Martin, M.D., Philadelphia, has been transferred to the Orthopedic Service under the direction of Majors E. G. Brackett and David Silver.

Dr. Carlton H. Davison, New Salem, who is serving on the western front in France, was recently gassed by a German shell and was partially blinded for a week.

Major Joseph Sailer has been appointed permanent chief of the medical staff at the base hospital at Camp Wheeler, Macon, Ga., succeeding Major Richard Weil, recently deceased.

The John Herr Musser Medical Research Laboratory of the University of Pennsylvania receives $25,000 by the will of Mrs. Anna Watson Syms, filed in Warren on December 6.

Dr. George F. Mish, Middletown, a member of the Dauphin County Medical Society, a graduate of the University of Pennsylvania Medical Department, in 1853, was 90 years old on July 5, 1917.

Major William Knowles Evans, Chester, is now assistant director of the Camp Greenleaf School of Military Hygiene, Fort Oglethorpe, Ga., of which school Major A. C. Abbott is director.

Drs. Marie K. Formad, Mary Getty and Laura Hunt, Philadelphia, who are about to sail for France, were tendered a dinner on December 7, by the Woman's Medical College of Pennsylvania.

The Home of Our Merciful Savior for Crippled Children in Philadelphia is the recipient of $5,000 and one half the income from a trust fund, bequeathed by the will of the late Sarah M. Gardner, Providence, R. I.

Major Charles A. E. Codman addressed the Dauphin County Medical Society and the Harrisburg Academy of Medicine at the celebration of the Twenty-Second Anniversary of the founding of the latter mentioned society, December 7.

Dr. Alice Weld Tallant, Philadelphia, is the representative of fifteen Smith College alumni from Philadelphia in a party of American college girls who are working amid devastation and misery to rehabilitate a section of France comprising fourteen towns.

Dr. Chevalier Jackson delivered the Mütter Lecture for 1917 before the College of Physicians of Philadelphia on December 14, his subject being Observations on the Pathology of Foreign Bodies in the Air and Food Passages, based upon the observation of 628 cases.

Pennsylvania Furnished Most Enlisted Soldiers.—According to reports given out in Washington, December 15, the total number of enlistments since April 1 for Pennsylvania was 37,674, her quota being 15,330. New York State comes next, having furnished 34,987 enlisted men, her quota being 18,226.

Another Physician's Reputation Cleared.—In 1913 a physician in Cambria County was sued for $35,000 for alleged malpractice in the management of a confinement case. The case was called on December 3 and was nonsuited after all the testimony of the plaintiff was submitted. This was Medical Defense Case No. 67.

The Aid Association of the Philadelphia County Medical Society.—The Bulletin Excerpt given on page 199 of the December Journal by the dropping of a line appeared to be the report of the Board of Directors of the Philadelphia County Medical Society, when it should have been of the Board of Directors of the Aid Association of that society.

DUES REMITTED.—So far as reported to the state secretary the following county medical societies have voted to remit the dues for 1918 of members who are actually in the service of the United States or her Allies: Adams, Allegheny, Beaver, Bedford, Berks, Blair, Bradford, Clinton, Crawford, Cumberland, Fayette, Lancaster, Lycoming, Mercer, Northampton, Northumberland, Somerset, Wayne, Wyoming and York. If other societies have voted to remit the dues of commissioned members in actual service will the secretaries kindly so notify the state secretary.

MEDICAL OFFICERS RESERVE CORPS AND ACTIVE SERVICE.—The Medical Section of the Pennsylvania State Committee of the Council of National Defense desires again to call attention to the fact that members of the Medical Officers Reserve Corps who desire active service should apply by letter to the secretary of this committee. Immediate active service is possible from time to time, and we shall endeavor to see that the men are called as soon as possible.

CHARLES A. E. CODMAN, M.D.,
Chairman.
CHARLES SCOTT MILLER, M.D.,
Recording Secretary.

RECOMMENDATIONS ADOPTED BY THE COMMITTEE ON HEALTH AND SANITATION OF THE PHILADELPHIA DISTRICT COMMITTEE OF THE PENNSYLVANIA COMMITTEE OF PUBLIC SAFETY.—I. Recommendations made to the director of the Department of Health and Charities of the City of Philadelphia:

1. That for the best interests of the city, and the sailors and soldiers within its borders, prostitutes, when diseased, be isolated, efficiently treated medically, and quarantined in properly equipped hospitals until their infectious stage has subsided.

2. That a squad of women policemen be created to control street-walkers.

3. Realizing the appalling fact that 90 per cent. of dispensary patients afflicted with venereal diseases quit treatment before discharged cured, it is desirable to use coercion through the cooperation of civil and medical authorities, of these moral slackers, if the indiscriminate spread of venereal disease is to be controlled. It is highly important before undertaking such action to abolish the medical impostors infesting communities, whose sole object is to lure and rob ignorant young men; therefore, the board of health is urged to adopt and enforce regulations which shall abolish so-called "medical museums" and advertising "specialists" and quacks. Also,

4. That the department of health have notices relative to the diagnosis and treatment of venereal disease prepared, stating the names of hospitals fulfilling the standard requirements, their location, dispensary and admission hours; that these notices be framed and placed in all public lavatories, saloons, theaters, hotels, industrial plants, department stores, military bases and cantonments.

5. That the venereal wards of the Philadelphia Hospital have their bed capacity increased so that that institution may properly care for infected prostitutes and misdemeanants referred from the municipal court and other sources.

II. Recommendations made to the State Board of Medical Education and Licensure:

1. That all general hospitals receiving or hoping to receive state aid financially shall maintain a separate department of genito-urinary surgery and venereal diseases with a recognized staff position distinct from the department of general surgery.

2. That this department shall consist of both an outpatient and ward service, prepared to receive patients afflicted with acute contagious and transmissible venereal diseases, who at the discretion of the chief of the genito-urinary department should be admitted.

3. That such hospitals be provided with the proper laboratory equipment for microscopic, bacteriologic, serologic or other examination and treatment of patients.

4. That in all hospitals maintaining a department of venereal diseases it is advisable for the social service department to provide male as well as female representatives for cooperation in tracing and controlling moral slackers afflicted with venereal disease.

ANOTHER CLEAN DAILY.—The following printed letter has been sent by the Physicians' Protective Association of Easton to the physicians of Northampton County and vicinity.

DEAR DOCTOR:

The following editorial from the November 5 issue of the *Easton Express* is self explanatory.

"In its editorial, news and advertising columns the *Express* will be clean. To appropriate for the moment the slogan of a great American Newspaper the *Express* will 'print all news that's fit to print,' but it will go further; it will exclude from its columns a class of advertising known as 'medical ads' which make claims of impossible cures and deceive unthinking and afflicted persons into believing that something beyond human power can be accomplished by the use of so-called medicines and cures. In this category of excluded advertisements we will include those which contain statements that are not fit to be read in the family circle. By taking this stand and adhering to it the *Express* realizes that the returns from its advertising patronage will be far short of the amount they would otherwise be, but if this paper cannot survive without this class of business it will close its doors, conscious that it perished with clean hands."

Considering the above editorial the Physicians' Protective Association at its meeting held on the 7th day of November, offered the following resolution:

Resolved, That the Physicians' Protective Association of Easton, Phillipsburg and vicinity hereby strongly endorse the Easton *Express* for the attitude it has assumed in excluding from its columns a class of advertisement known as "medical ads" which make claims of impossible cures, thereby deceiving unthinking and afflicted persons into believing that something beyond human power can be accomplished by the use of so-called "medicines and cures." We appreciate the sacrifice the publishers are making in this ruling and trust that other papers will follow the example furnished by the *Express* and thereby purify their columns making them fit to enter the home circle.

On motion, the above was adopted and the secretary instructed to furnish a copy to all members of the profession as well as the newspapers of the city.

It was further Resolved, That we request all members of the profession to lend their moral and financial support to the *Express* and place their names on the paper's subscription list.

GENERAL NEWS ITEMS

Dr. Charles A. L. Reed, Cincinnati, is reported to be convalescing in Atlantic City from a serious sickness.

Dr. Esther C. P. Lovejoy, Portland, Ore., is reported to have been commissioned First Lieutenant by the French Government.

Dr. W. H. Gilmore, secretary of the Illinois State Medical Society, is convalescing from a serious sickness due to infection from a carbuncle.

The Medical Protective Company of Fort Wayne, Ind., has opened a Philadelphia office in the Medical Arts Building with E. G. Shorrey in charge.

Insane Women at Work.—Some one hundred inmates of the Connecticut State Hospital for the Insane at Middletown are happy in the work of knitting and making bandages for the soldiers.

Major Richard Weil, M. R. C., U. S. Army (College of Physicians and Surgeons, New York, '00), died in the base hospital at Camp Joseph Wheeler, Macon, Ga., of which he was chief of the staff, on November 19, from pneumonia, aged 41.

Council on Pharmacy and Chemistry.—During November the following articles were accepted for inclusion in New and Nonofficial Remedies: Salvarsan, Farbwerke-Hoechst Company; Borcherdt's Malt Sugar, Borcherdt's Malt Extract Company.

Medical Officers Needed by Navy.—Surgeon-General Braisted of the United States Navy announces that the Navy has not yet reached its maximum in needs for commissioned medical personnel, and that it is still welcoming offers of service for such duty.

Christian Scientist Chaplain.—Edward W. Dickey, recently appointed chaplain at large in the army, with rank of first lieutenant, has been assigned to the Seventy-Seventh Division, Camp Upton, New York. He is the first Christian Scientist chaplain appointed to the army.

Medical Pioneers of Kentucky.—The November issue of the *Kentucky Medical Journal* contains 176 pages devoted to the Medical Pioneers of Kentucky. In this list are found the names of many prominent physicians and surgeons. Much information is given regarding Dr. Ephraim McDowell, the first ovariotomist.

Dr. Ami Jacques Magnin (Bellevue Hospital Med. Coll., '81) head of the American Hospital in Paris, died suddenly in Paris, November 26, aged 59. At the outbreak of the war he selected the building now occupied by the American Ambulance, and aided in organizing a surgical staff for the new institution, largely from the staff of the already existing American Hospital.

Care of Returned Soldiers.—Conferences are being held under the auspices of the Surgeon-General to consider problems involved in caring for soldiers who may be returned from the American Expeditionary Forces unfit for further service. The plans contemplate provisions for the necessary surgical and medical attention by specialists; for reconstruction hospitals and curative workshops; for reeducation in the use of injured and artificial limbs; for vocational education or reeducation; for occupational studies of industrial and agricultural conditions; and for returning soldiers to employment in civilian life on a self-supporting and useful basis.

Illegal Drug Sellers.—Drs. Ulysses S. G. Hughes and John H. Hughes, Kansas City, charged in the federal court with illegal drug selling, and convicted, are said to have been sentenced, November 19, to four years' imprisonment in the federal penitentiary, Leavenworth. One brother was convicted on eleven counts, and the other on nineteen, and both are said to have been previously convicted on the violation of the Harrison Narcotic Law, in the federal court in Kansas.

The American Journal of Ophthalmology beginning with this month embraces the *Annals of Ophthalmology, Ophthalmic Record, Ophthalmology, Ophthalmic Year Book, Ophthalmic Literature* and *Annales de Oftalmologia.* Edward Jackson is the Editor and Clarence Loeb, Associate Editor, with Adolph Alt, M. Uribe-Troncoso, Meyer Wiener, Casey A. Wood and Harry Wurdeman as editorial staff. Price is ten dollars per year in advance and the publication office 7 West Madison Street, Chicago.

Railroad Hospital Car.—The Erie Railroad has what is declared to be the first National Army hospital car, which has been designed and standardized by its mechanical department. It was developed from a suggestion made by Dr. David Orr Edson of New York. It probably will be used to transport sick soldiers from the various cantonments to the base hospitals. The main portion of the car contains seven two-story cots on each side. It has regular hospital equipment and provision is made for doctors and nurses.

Government Aid in Making Return of Income.—The government is going to send to every county seat and some other towns men to help you figure out your income tax. Postmasters, bankers and newspapers will be able to tell when and where to find the government's income tax man. He will answer your questions, swear you to the return and take your money. Returns of income for 1917 must be made between Jan. 1 and March 1, 1918. Collector of Internal Revenue C. G. Lewellyn has said that the government recognizes many persons experience a good deal of difficulty in filling out the income tax forms, and that taxpayers resident at points where collectors' offices are not easily accessible find it hard to get proper instruction in the law. Every married person living with wife or husband and having a net income of $2,000, and every unmarried person not the head of a family and having a net income of $1,000 for the year 1917, must make return of income on the form prescribed; there will be hundreds in every community seeking light on the law and help in executing their returns. Every collection district in the nation will be divided into districts, with the county as the unit, and a government officer informed on the income tax assigned to each district. He will spend hardly less than a week in each county, very likely in the courthouse at the county seat. In cities where there are collector's branch offices, he will be there; in other cities possibly at the city hall. He will have the forms on which to make returns. "Net income" is the remainder after subtracting expenses from gross income. Personal, family or living expense is not expense in the meaning of the law, the exemption being allowed to cover such expenses. Practically every professional man will be required to make returns and pay tax. The law makes it the duty of the taxpayer to seek out the collector. The taxpayer has to go to the government, and if he does not within the time prescribed he is a violator of the law, and the government will go to him with its penalties.

COMMUNICATIONS

UNIFORMS FOR MEDICAL RESERVE OFFICERS

In answer to inquiries regarding the news item on page 119 of THE JOURNAL for November, the following has been received:

"*Dear Dr. Stevens:* Replying to your letter of the seventh I will say that since my letter of August 29 the War Department has issued instructions that no quartermaster's supplies be sold to officers of the Army; this on account of the fact that supplies are not sufficient for enlisted men. We trust this embargo will be relieved in a short time.

"Sincerely,

"ROBERT E. NOBLE,

"Lieutenant-Colonel Medical Corps, U. S. Army."

BUREAU OF MEDICAL EDUCATION AND LICENSURE

MEMBERS BY APPOINTMENT

JOHN M. BALDY, Pres., 2219 DeLancey St., Philadelphia.
DANIEL P. MADDUX, Chester.
IRVIN D. METZGER, Pittsburgh.
CALVIN L. JOHNSTONBAUGH, Bethlehem.
ADOLPH KOENIG, Pittsburgh.

MEMBERS EX-OFFICIO

NATHAN C. SCHAEFFER, Sec., Dept. of Pub. Inst., Harrisburg.
SAMUEL G. DIXON, Harrisburg.

ADMISSION OF VENEREAL DISEASES TO HOSPITALS

Philadelphia, Dec. 7, 1917.

To the Editor:—The first of January, 1917, the Bureau of Medical Education and Licensure after careful review of the situation issued through their Bulletin No. 6 the following communication to the hospitals of the state approved for internship:

"Venereal diseases are one of the great menaces to the health and social welfare of the community. Patients suffering from these are among the first to apply for treatment to a young physician entering into practice; consequently there is no single class of cases in which the intern should receive more careful instruction. Without justifiable reason such cases are routinely refused admission to hospitals. This refusal is particularly unwarranted in hospitals receiving state aid or receiving the approval of the state for the privilege of giving the fifth year of education to interns. All such hospitals should make immediate provision under the direction of their medical and surgical staff, for the admission of venereal cases, of cases of purulent ophthalmia and of cases of vaginitis in children. The coming reinspection will take cognizance of compliance with these suggestions."

Since this time the United States has gone to war. Requests have reached this Bureau from various sources (including the Medical Section of the Council of National Defense, the Committee of Public Safety for the Commonwealth of Pennsylvania, as well as the Medical Society of the State of Pennsylvania, through the resolution introduced by Dr. John D. McLean of Philadelphia and adopted by the House of Delegates) that the Bureau take action in order to secure the admission of venereal diseases to the hospitals of the state. In accord with this movement the Bureau together with the State Board of Public Charities issued the following letter, a copy of which was sent to each of the hospitals in the Commonwealth:

"In view of the fact that we are engaged in war, which by virtue of the spread of venereal infections, has always involved the greatest danger to the efficiencies of armies as well as to the well being of civil communities, and in view of the fact that our national government is now making strenuous efforts to control the prevention and spread of all infectious diseases and thereby conserve the resources of the nation, it is essential that proper provisions be made for the treatment of this class of patients.

"It is urgently important that all general hospitals in the state shall make provision for the reception and treatment of this class of patients, and we therefore recommend that:

"Every hospital shall make preparations and provide equipment for the admission of patients afflicted with venereal diseases, and shall strike from their present by-laws or rules any regulation which forbids such admission.

"Hospitals which maintain dispensaries, but have no separate venereal department, are strongly urged to establish such department under the charge of a genito-urinary specialist.

"Provision should also be made by such hospitals for admission for treatment of cases of this character as cannot properly be cared for in the dispensary.

"It is requested that this matter be brought promptly to the attention of the board of managers of your institution and if it has not already been done, that action in line with the above recommendations be taken.

"It is further requested that notification of the attitude of your hospital towards this matter be promptly reported to the State Board of Public Charities, in order that this Board and the Bureau of Medical Education and Licensure may have the definite information for their files."

The replies received in answer to this communication have in a large proportion of cases been most gratifying; on the part of a number hesitation has been evidenced; in the case of a few refusal has been recorded.

In view of this attitude the Bureau has felt that it was warranted in using such methods of compulsion as lay in its power. Hence at the meeting of the Bureau in Harrisburg, November 28, 1917, after very careful survey of the whole field the following resolution was adopted:

"In view of the fact that an appeal has been made by the federal authorities urging hospitals to admit cases of venereal diseases to their wards and dispensaries, and, in view of the fact that the national emergency emphasizes the special need of this training by interns, we feel the necessity at this time of notifying all hospitals of the state approved for internship that it now is imperative that they shall comply with our request as made in Bulletin No. 6, page 35, which pertains to these matters.

Resolved, That the above notice be sent to all approved hospitals of our state, and that failure of compliance with this request will result in the elimination of the name of such hospital from the approved list for internship on the issuance of the new Bulletin, January, 1918."

The above resolution together with a copy of the following letter has since that time been forwarded to each of the hospitals in the Commonwealth approved for internship:

"We are enclosing you a copy of Bulletin No. 6 and would direct your attention again to page 35 under the caption: 'Admission of Venereal Diseases to Hospitals,' as well as to page 36 under the caption: 'Future Readjustments.'

"In connection herewith we are also enclosing you a resolution passed by the Bureau of Medical Education and Licensure at its meeting in Harrisburg under date of November 28, 1917.

"This communication is being sent to all hospitals approved for internship in order that no error may be made by the Bureau in the publication of the 1918 edition of the Bulletin pertaining to hospital intern year. Kindly acknowledge receipt of this communication."

At a later time when the hospitals have had time to adjust themselves to this request the results will be tabulated and reported.[1]

Very truly yours,
J. M. Baldy.

BOOKS RECEIVED

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

The Principles of Mental Hygiene. By William A. White, M.D. With an Introduction by Smith Ely Jelliffe, M.D., Ph.D. New York: The Macmillan Company, 1917. Price, $2.00.

Physical Diagnosis. By W. D. Rose, M.D., Lecturer on Physical Diagnosis and Associate Professor of Medicine, Medical Department, University of Arkansas. Two hundred ninety-four illustrations. St. Louis: C. V. Mosby Company, 1917. Price, $4.00.

An Intermediate Textbook of Physiological Chemistry. With Experiments. By C. J. V. Pettibone, Ph.D., Assistant Professor of Physiological Chemistry, Medical School, University of Minnesota, Minneapolis. St. Louis: C. V. Mosby Company, 1917. Price, $2.50.

A Practical Dietary Computer. By Amy Elizabeth Pope, author of "Quiz Book of Nursing," "Anatomy and Physiology for Nurses," "A Medical Dictionary for Nurses," "Physics and Chemistry for Nurses," "Essentials of Dietetics," and with Anna Maxwell, of "Practical Nursing." New York and London: G. P. Putnam's Sons, The Knickerbocker Press, 1917. Price, $1.25.

Technic of the Irrigation Treatment of Wounds by the Carrel Method. By J. Dumas and Anne Carrel. Authorized translation by Adrian V. S. Lambert, M.D., Acting Professor of Surgery in the College of Physicians and Surgeons (Columbia University), New York. With an introduction by W. W. Keen, M. D., LL.D., F.R.C.S. (Hon.). New York: Paul B. Hoeber. Price $1.25.

Talks on Obstetrics. By Rae Thornton La Vake, M.D., Instructor in Obstetrics and Gynecology, Obstetrician-in-Charge of the Outpatient Department, University of Minnesota; Associate Attending Obstetrician and Gynecologist, Minneapolis City Hospital; Obstetrician-in-Charge of the Outpatient Obstetric Department, Wells Memorial Dispensary; Obstetrician to the Swedish and Abbott Hospitals, Minneapolis. St. Louis: C. V. Mosby Company, 1917. Price, $1.00.

Surgery and Diseases of the Mouth and Jaws. A Practical Treatise on the Surgery and Diseases of the Mouth and Allied Structures. By Vilray Papin Blair, A.M., M.D., F.A.C.S., Professor of Oral Surgery, Washington University Dental School; Associate in Surgery, Washington University Medical School. Third Edition. Revised so as to Incorporate the Latest War Data Concerning Gunshot Injuries of the Face and Jaws. Compiled by the Section of Surgery of the Head, Subsection of Plastic and Oral Surgery, Office of the Surgeon-General of the Army, Washington, D. C. With 460 Illustrations. St. Louis: C. V. Mosby Company, 1917. Price, $6.00.

The Practical Medicine Series. Comprising ten volumes of the year's Progress in Medicine and Surgery. Under the General Editorial Charge of Charles L. Mix, A.M., M.D., Professor of Physical Diagnosis in the Northwestern University Medical School. Series, 1917. Volume VII, Obstetrics. Edited by Joseph B. deLee, A.M., M.D., Professor of Obstetrics, Northwestern University Medical School. With the collaboration of Eugene Cary, B.S., M.D., Assistant Gynecologist, St. Luke's Hospital; Instructor in Gynecology, Northwestern University Medical School. Price, $1.35. Volume VIII, Pharmacology and Therapeutics. Edited by Bernard Fantus, M.S., M.D., Associate Professor of Medicine, Subdepartment of Therapeutics, Rush Medical College, Chicago. Preventive Medicine. Edited by William A. Evans, M.S., M.D., LL.D., Ph.D., Professor of Preventive Medicine, Northwestern University Medical School. Price, $1.50. Chicago, The Year Book Publishers. Price of series of ten volumes, $10.00.

SOCIETIES

PITTSBURGH ACADEMY OF MEDICINE

Meeting of Nov. 26, 1917, President J. I. Johnston presiding.

Acute Death from Chlorin Poisoning. Oscar Klotz. The study of chlorin gas poisoning has been stimulated by the present war. Prior to 1915 there were but two or three references in the literature concerning the harmful action of chlorin on health. Efficient gassing by chlorin depends largely on a favorable breeze to waft the chlorin to the opposing trenches, with few disturbing air currents to lessen the concentration, and also on dry ground surface, as chlorin is very soluble in water.

Shaefer showed that the immediate effect of chlorin gas is to irritate the mucous membranes and particularly the bronchioles. The capillaries dilated markedly, resulting in pulmonary edema. There is an "obstruction in the pulmonary vessels rendering it impossible for the blood to pass freely to the left auricle and ventricle." It is clear that systemic poisoning does not occur, and the distant effects are largely due to the result of intrathoracic pathology.

Hill describes a typical human case of gassing as one "cold with a subnormal temperature, conscious but restless, with slow full pulse (except in the collapsed cases). Face is cyanosed and the expression strained and anxious. Some patients sit propped up with head thrown back, gasping for breath; others lie on their side with the head over the edge of the stretcher in an attempt to aid expectoration. The respirations are jerky and hurried, often numbering 40 a minute, and are associated with a choking cough, accompanied by a varying amount of frothy expectoration. With each inspiration the chest is expanded to its fullest, all the auxiliary muscles being brought into play just as in an asthmatical paroxysm. This is first or asphyxial stage, which, if the patient survives, gradually passes off after some thirty-six hours. After the first stage the patient falls into a sleep and awakes feeling much better. But after a few hours of comparative quiet, symptoms of bronchitis begin to manifest themselves. In the majority of cases these are not severe, because, no doubt, in nearly all the severe cases death occurs in the first stage. In the cases in which the patients are kept alive with difficulty there is a short quiescent stage followed by intense bronchitis. The frothing gives place to greenish mucopurulent expectoration, consciousness to delirium, the temperature rises from subnormal up to 104 F., the pulse becomes of small volume, with its rate increased perhaps to 160, the respirations are less choking but more shallow, and number up to 70 per minute before death."

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[1] December 19: Of the 68 hospitals approved for internship 55 are available for the admission of venereal diseases, 13 are still in process of adjustment. In addition throughout the state there are 70 other hospitals which have signified their acquiescence and are at this time available for the admission of these diseases.

This description of gas poisoning in man is very similar to that noted in animals. When guinea-pigs are exposed to 1:1,000 chlorin gas, evidence of irritation is seen in the watering of the eyes and in the attempts on the part of the animal to seek a position away from the fumes. For a time the animal appears to be holding his breath. Soon, however, he is forced to inspire, causing him to cough and sneeze. With this, there is a watering of the nose, and the animal paws his face as if to brush away the irritant. The respirations now become more rapid but jerky, there appears to be some difficulty in breathing and the thorax is held quite rigid, while the costal borders tend to flare and shallow respirations are carried on mainly by the diaphragm. The animal is distinctly distressed, and gives intermittent gasps. If at this stage the animal is removed from the chlorin mixture, the gasping continues for some time, even hours, as he is recovering. If the animal has been overexposed the gasping continues after he is in the free air, until death. When allowed to remain in the gas mixture, the respirations shortly before death become hurried and then suddenly cease. During this time the heart beats regularly and continues for some time after cessation of respiration.

When mice were exposed to the lethal concentration of the chlorin gas, it was found that immediately after death the congested areas of the lungs contained but small quantities of fluid blood. The congested areas stood out prominently and did not shrink or collapse. The tissues were edematous and there was frothy fluid in the bronchial tubes, but the blood within the congested portions of the lung substance appeared coagulated. On several occasions we were surprised to find that this coagulation proceeded into some of the larger vessels. The right heart, both auricle and ventricle, was dilated and continued beating after cessation of the respirations; the left heart was in firm systolic. The systemic circulation had ceased and respiration was no longer maintained owing to cerebral anemia. It appeared, as Shaefer intimated, that there was some obstruction in the pulmonary circulation.

Even with the intense congestion of the lung we have never observed hemorrhage sufficient to tinge the edematous fluid. The remarkable rapidity and extent with which this edema develops, suggested the possibility that the abstraction of water produced marked changes in the blood within the pulmonary capillaries. That this was the case was demonstrated in blood counts made from the pulmonary vein of the gassed animals (mice and guinea-pigs), such counts showing an increase of from 2,000,000 to 5,000,000 red cells over the normal count. It was found, therefore, that the obstruction in the pulmonary circulation referred to by Shaefer was in part at least due to the increased viscosity of the blood.

We have found that human blood placed in an atmosphere of 1:1,000 of chlorin coagulates in about fifteen seconds; stronger concentration reduces this time. It is probable that within the lung where, through congestion and edema a slowing of the capillary circulation has already taken place, and where because of the great abstraction of water from the local tissues, the blood is in the threshold state of coagulation, the local and direct effect of chlorin on the capillaries and blood materially hastens coagulation.

The reaction (microscopic) in the lung varied according to the length of time of exposure to chlorin and with the concentration of the gas used in the experiments. The mildest reaction consisted of congestion, affecting particularly the capillaries of the alveolar walls and also the larger blood vessels, both arteries and veins. When the congestion has continued for longer periods of time, an edema made its appearance within the air sacs. This edematous fluid is of a very watery nature and of low albuminous content. The alveoli are flooded with this fluid, and when it persists a gradual shrinking in the size of the alveoli takes place. Concurrently with the appearance of this edema, scattered portions of the lung become emphysematous. These emphysematous alveoli become widely stretched and are devoid of fluid. In this stage congestion, edema and some emphysema are the outstanding pulmonary changes.

Thus, to sum up, the acute reaction found in the lungs of animals exposed to chlorin consisted mainly in an intense congestion with edema and capillary thrombosis. Animals surviving a longer period showed a pulmonary infiltration of inflammatory cells, mainly lymphocytes. The acute capillary thrombosis appears of importance in the acute deaths when the concentration of the gas is great.

Increased viscosity and capillary thrombosis impede the ready flow of blood through the lung and lead to a fall in the arterial blood pressure. Thus acute chlorin gassing differs materially from other forms of asphyxia.

The paper was discussed by Dr. S. R. Haythorn, who complimented Dr. Klotz on this pioneer work and spoke of his own beginnings in the experimental field of death caused by chlorin gas poisoning, and which coincided with and corroborated Dr. Klotz' experience.

An Unusual Case of Lobar Pneumonia with Meningismus was reported by Dr. Utley: Boy, 4 years 11 months old, was seen sixteen hours after onset of his illness, when the following history was obtained: Boy played out of doors all the preceding day. At supper time he complained of being tired, said he was not hungry and ate very little, and while his father and mother were talking to him he fell asleep. He was carried to bed and undressed; two hours later he vomited his undigested supper. He spent a restless night, and when seen in the morning had a temperature of 105, pulse 50, respiration 28. He was very irritable, alternately bright and stupid; tongue heavily coated. Physical examination was negative except patient was hypersensitive to touch. He was given calomel, gr. 1, to be followed by saline, salol, gr. 2½, every three hours.

The following day he was found in the same condition, except periods of stupor were more marked. Temperature, pulse and respiration were unchanged; Kernig's + both sides, Babinski negative; neck was rigid at times; at other times easily flexed. Possibility of meningitis and poliomyelitis was recognized, as well as any of the acute infections of which there was no history. Pneumonia was considered, but no physical signs available and no cough. Lumbar puncture was done and approximately 20 c.c. fluid removed, under considerable pressure, stream poured out when needle was removed. A prompt examination by Dr.

E. W. Willetts showed it to be normal, with a cell count of seven lymphocytes to the cubic millimeter. A short time after lumbar puncture patient went to sleep and slept for several hours, first restful sleep since onset. The following day there was slight dulness over right upper lobe, with a few large râles opposite third interspace, with somewhat higher pitched and prolonged expiration.

The next day, or the fifth day of illness, frank signs of consolidation over right upper lobe. Diagnosis was lobar pneumonia. On the seventh day the temperature fell to normal, where it remained. Convalescence was uneventful. The case is of interest because of prevalence of acute poliomyelitis and acute meningitis at the time.

The case was discussed by Dr. Willetts, who cited the fact that patients, showing meningitis symptoms at the onset, seldom have meningitis, but these symptoms were rather those of meningismus.

Case of Actinomycosis with Mastoiditis. Dr. Milligan: Young man appeared at the office with many papules about face which, when scraped, showed the ray fungus. He had acute mastoiditis, which also showed ray fungus at operation. Treating with Dakin's solution brought about prompt healing. Question arises whether the man will subsequently show characteristic lesions of actinomycosis.

Some Observations on the Diagnosis and Treatment of Cerebrospinal Lues. Dr. J. H. Whitcraft: All syphilitic infections of the central nervous system are regarded as cases of cerebrospinal lues, instead of being classified as paresis, tabes, etc. The author considers all obscure and many apparently clear cases of cerebrospinal disease as syphilitic until such a position can be shown to be untenable. Of first importance is a careful history. A patient is cited who showed only a trifling nervous disorder, which was obscure until a ++++ Wassermann was reported from two different laboratories. All chancres, hard or soft, should be regarded as potentially syphilitic. Every effort should be made to elicit a history of the incubation period. A good history and a careful physical examination are more dependable than the laboratory, whose reports are often very misleading. In support of this a patient was cited who finally admitted a chancre sixteen years previously, with secondaries. He now has shooting pains down the legs, a spinal myosis, a positive Romberg and absent knee jerks. The blood Wassermann test was negative, the spinal fluid was clear, under very slightly increased pressure, showed one lymphocyte to the cubic millimeter, and the Nonne and Noguchi tests were absolutely negative. This patient has not been benefited by treatment, and it has been observed that when laboratory findings are negative the results of treatment are unsatisfactory.

The author believes that every diagnostic test should be applied to each case investigated. Cerebrospinal lues exists in the presence of a negative blood Wassermann test. On the other hand, the blood Wassermann may be positive in cerebrospinal lues, although the cerebrospinal fluid is negative. There have been a few cases whose diagnosis rested on the cell count, the other tests being negative. A case was cited in which blood and spinal fluid tests were negative, and yet the patient showed a count of 121 lymphocytes to the cubic millimeter. This patient was given 0.4 gram salvarsan intravenously and later a + blood Wassermann test.

The author believes in the mixed treatment of syphilis by mercury and the iodids supplemented by salvarsan. Often cerebrospinal lues has done nicely under the intravenous use of salvarsan; other cases require the Swift-Ellis treatment. Recently the bichlorid of mercury has been used intravenously after the method described by Nixon, with very satisfactory results.

Dr. E. W. Willetts, in discussing, agreed with Dr. Whitcraft in regarding all chancres hard or soft as potentially syphilitic, only he carries it a step further and regards all chronic sores potentially syphilitic until proved otherwise.

Dr. S. R. Haythorn spoke of the value of the colloidal gold test if a properly standardized solution could be procured.

Dr. James C. Burt agreed with Dr. Whitcraft as to the syphilitic potentiality of all chancres. He believes that after all there is no better treatment for syphilis than mercury and the iodids, and that the best method of administering mercury is by inunctions.

Frederick B. Utley, Reporter.

COUNTY SOCIETY REPORTS

HUNTINGDON—DECEMBER

The Huntingdon County Society met in Huntingdon, December 13, at 1:30 p. m., with Vice President Fetterhoof in the chair and nine members present. The annual election was held but the address was omitted as the retiring president is with the Fifty-Sixth Infantry at Fort Oglethorpe. Dr. M. R. Evans, who has retired from active practice, was made an honorary member because he has been a faithful member, always having his papers ready and doing all things required of him. An excellent program for the coming year was presented by the committee, who assigned subjects to the members that will bring out the specialty in which the member is most proficient. We believe this to be a step in the direction of heartier cooperation among our members. The annual picnic, address, and banquet have been made permanent features. The Censorial District meeting will be held in Huntingdon in April. The few men in our county who are not members are being solicited to join the society.

J. M. Keichline, Jr., Reporter.

PHILADELPHIA—NOVEMBER

The Philadelphia County Society met November 28 at 8:30 p. m., President Major Henry D. Jump in the chair, and presented a Symposium on the Function of Orthopedic Surgery in the War.

"Activities of Orthopedic Surgery in the War," was presented by Major David Silver. In the organization of the work of orthopedic surgery the Surgeon General has been guided very largely by the experience of the English army and has, in addition, paid special reference to (1) the securing of a sufficient personnel; (2) provision for an ample number of beds; (3) the reception of the wounded soldier as early as possible in the division to which he belongs and with the least possible change of dressing.

The securing of the personnel has progressed very satisfactorily, and there are now about eighty-five men in training in Europe, sixty men assigned to camps in this country and eighty or more placed in courses of instruction, with a considerable number still unassigned. Especial attention has been paid to the training of men who did not have a sufficient fundamental knowledge of orthopedic surgery. For these men the plan of instruction consists of intensive courses of six weeks' duration, work in the cantonment hospitals under qualified orthopedic surgeons and, later, work abroad as assistants to qualified men.

Efforts are also being made to instruct the medical men generally, the line officers and the enlisted men themselves in the care of the feet, the handling of minor joint injuries and the simpler injuries of the back.

In the plan for the organization of the work in France the Surgeon General has arranged for the establishment of an orthopedic section in each hospital, and this will be placed beside the fracture section in order that the same brace shop and curative workshops may be used for both. About 5 to 7.5 per cent. of the wounded are expected to be returned to this country, and these will be placed in the general reconstruction hospitals which are being planned in the various sections of the country. Here the reeducational work will be carried out.

The Surgeon General has established a laboratory for the study of the various problems connected with artificial limbs. There will not be much difficulty in the supplying of artificial legs to the soldiers, and this has reached a high degree of perfection in the hands of the American manufacturer. The substitute arm is naturally, however, not so satisfactory on account of the complicated demands that are made on it when we attempt to supply the functions performed by the normal hand. So far it has been found more satisfactory to use some form of mechanical hook for labor, reserving the hand for social use.

Orthopedic surgery is, however, also concerned with the industrial problem which is equally important to that of the military. The comparison of statistics clearly demonstrates the great importance of applying the same plan which has proved so valuable in military work to industrial work as well. In war we may have a great many casualties in one day, while in industry the number of daily accidents is small; this loss, however, is continuous, so that the economic loss of industrial accidents in the long run assumes an equal importance to the casualties in war. In view of the probable industrial struggle that will follow immediately after the conclusion of the present war, it is of vital importance that the reeducational plan be so made as to embrace both the military and the industrial need.

"The Civic Aspects of Orthopedic Surgery in the War," was presented by Major Henry R. Hayes. During the long days of the European struggle prior to the entry of our country into the war, we shuddered, more than at anything else, at the frightful loss in the unearned increment of the young men of the nations involved. To alleviate such a condition, our government, through the surgeon general, says to those who will return disabled in service: "We will restore or reconstruct you physically and mentally so far as possible. We will further reeducate you if you cannot be returned to service, that you may earn a living which will be in addition to the compensation which you will regularly receive from the government for the injuries incurred in service. All this will be done for you while in the Army."

Casually, this might not seem to be a large problem, but not so on analysis. A man returned disabled for service will probably need in addition to the surgical treatment received overseas, further surgical and curative treatment at home. His medical and mental limitations with relation to the character of his previous occupation in civil life must be carefully studied by the medical and vocational staff to determine the specific training he shall have. England and France have made great strides in the surgical and civic reconstruction. Surgeons and physicians must tell us what men with given disabilities cannot do. Experts in vocational training must advise what trades to teach the disabled. Employers and employees must advise us on the local trade and labor markets. There must be fundamental organization that employers and employees may not be asked to take unreasonable risks; neither must there be discrimination against the crippled. A man reconstructed and reeducated must be presented to society, equipped to earn the pay of a given job. In connection with the State Compensation Act, one of the difficult problems to be settled is that of the extra liability involved in the employment of a disabled soldier. It would seem unreasonable to ask the employer to assume this liability. There must also be studied the requirements of organized labor with relation to the closed shop and its bearing on the reeducation and employment of the disabled soldiers. Exemptions under the National Army Draft Law for physical disabilities have been astonishingly large, and not a small number of such disabilities are orthopedic in character. This situation is being studied by one department of the government that such disabilities in the younger and future generations may be minimized. Reconstruction work, therefore, will require the close cooperation of army federal bureaus, state and local officials and civilian organizations. Industrial surgery is destined to make rapid progress. Yearly there have been more industrial injuries in this country than there will probably be in the war. It is to be hoped that the experience gained from this work in connection with the war may be adapted to industrial and civic reconstruction, and that as a result we may have a more sound body politic and the "passing of the cripple."

Dr. G. G. Davis, member of the Orthopedic Advisory Council: It is strange that a great war should have been necessary to arouse the people to a sense of their responsibility. We speak, for instance, of the military reconstruction, the importance of the reconstruction in industrial enterprises, but I think the purely civil cripple is not yet receiving a fair chance. In this city we have very few institutions for solely reconstructive work. For our general surgical work we are well provided with many large hospitals, but in almost all such hospitals there is a standing rule that a person treated for injury shall not remain more than three months. Some cripples can be cured inside of this time, but many cannot. All through our community there is a class of cripples who cannot receive treatment because of the lack of provision. I believe, however, that there has been a revolution which will force the recognition of this necessity. My own work gives many examples of such need; a man with an injured elbow may be discharged from a general hospital with his wound healed, but with a crippled arm. He floats around the community as a cripple until he comes under treatment for the restoration of the arm to working condition. Another example is furnished in the case of a child with tuberculosis of the hip. The tuberculous condition clears up, but the patient is handicapped with a deformed hip and must be admitted to a hospital in which the crippled condition can be remedied.

Nearly all the cripples of a community can, by proper treatment and education, be made largely self-supporting, and many of them completely so. This problem has occupied the attention of the orthopedic profession, but it seems to have required the war to make the people appreciate its importance. In the Widener Home for Crippled Children with which I am connected, nearly all who have gone out from the home are occupying good positions in the community. There is the habit in our community of absolutely ignoring the cripple and of refusing him a chance to work, even though he is qualified. Employers ought not to be asked to take the added risk involved in the employment, in some of the industries, of the maimed. There should, however, be some understanding concerning this which, I believe, is not yet provided for in our Compensation Act. Also, cripples are refused positions because people do not like to see them. I believe, however, that we shall see the efforts of our community directed to this reconstructive work for the civil as well as for the military and industrial cripple.

Dr. A. Bruce Gill: It has been stated that experts must advise us concerning the trades taught the disabled. It would be difficult, however, to find experts in this line, since the work is in its very beginning. No evil is unmixed, and the opportunity to the cripple from this time will be such as it never was before. In this state there are two comparatively small institutions devoted to the training of cripples for the industrial world, and there are only four states in the Union which have given any state attention to this work. There will be required cooperation and study to equip and find industrial positions for the cripples who will be returned to us after the war. The war has opened the eyes of the employer to what the cripple can do.

Dr. Charles K. Mills: The War Department is sending to our city military men who are receiving special training in certain courses of instruction. One mistake I think which may have been made in our work is in not having coordinated these different classes. For instance, we have a neuropsychiatric class, a neurologic, surgical and an orthopedic group. The relations of orthopedic surgery to neurology are most important. That which should most concern us in the treatment of cripples is the diagnostic study. Personally I know that many of our orthopedic surgeons are men well versed in practical neurologic diagnosis. I have seen in civil practice residual palsies, organic nerve affections, and have had evidence of the mistakes made by the surgeons dealing with these cases. The first consideration should be a knowledge of the various conditions of the nervous muscular system, bones and joints responsible for such cases. While the greatest possible attention should be paid to the training of men for orthopedic work, their studies should be devoted to a very considerable degree to neural medicine.

There are cases in this war which bring back to me the statements of Sir Benjamin Brodie and of Sir James Paget that functional hysteria were due not to organic injury of nerve, muscle, bone or tendon, but to certain special conditions of the nervous system. I would emphasize the importance of a diagnosis in all these cases made from the study of the nervous system as well as of the visible injury. Every orthopedic base hospital or reconstruction hospital should have, and doubtless will have, a neurologic member of its staff. One of the great hospitals of this city with which Dr. Davis is connected is the Orthopedic, which is also, fortunately, an "Infirmary for Nervous Diseases." This combination of work was brought about by the great neurologist, S. Weir Mitchell, and Dr. Thomas G. Morton, surgeon, and the institution has obtained results which would have been impossible had there not been this coordination of neurology and surgery.

Major Silver (closing): One distinction most important to make is that orthopedic and reconstruction are not synonymous terms. The point emphasized by Dr. Davis of the urgent need of carrying out orthopedical work in our general hospitals is one of the most important points in our industrial problems. Men discharged from the hospital failing to follow directions, or given no directions, acquire atrophy from disuse of an injured member. We must supply the missing link so that men are physically restored before they are allowed to leave the hospital. The question of the experts mentioned by Dr. Gill presents a difficult problem; yet, any one who has seen what is done by these men who have had an amputation will not ask for more finished experts than they are. One man with one arm amputated is a dentist. I think that in reeducating these crippled soldiers we shall be the ones who are reeducated.

"War Activities in the Surgeon General's Office," was given by Major John D. McLean. The activities of the Surgeon-General's Office are many and varied. The Medical Department of the Army is farther ahead in preparedness than any other, due to the fact that the doctors of this country have volunteered. The Surgeon-General has recommended to the Adjutant-General the issuing of 18,170 commissions, and of these, 14,862 have been accepted. We have been asked if possible to get immediate service for a great many of the men in the corps. The request for a particular service carries weight, but does not insure that you receive such service; men are classified according to the work they are qualified to do. We want every doctor who is qualified physically, mentally and morally to join the Medical Officers Reserve Corps that they may be classified according to the work for which they are best fitted, even though they may not be called to active duty. We are all wishing that this war might be over soon. Dr. Crile expresses the feeling of the French who think that the war may be "half over." There is a surprisingly large number of doctors also in the Naval Medical Reserve Corps and in the Medical Reserve Force of the Navy. There are also a Dental Reserve Corps and a Dental Reserve Force. Orders assigning members of the Medical Officers Reserve Corps will read "Prepare at once." If circumstances have arisen necessitating an extension of time, not more than fifteen days will be granted from the date of the order until you report at camp. It will be particularly pleasing to one member of the Philadelphia County Medical Society that there is to be organized another medical unit or corps composed of men who would have been in the Medical Officers Reserve Corps, except for disability or age. It is a tribute to our fellow member, Dr. William Duffield Robinson, who originated the idea which has been enthusiastically received all over the United States. Colonel Noble, our representative in the Surgeon-General's Office, tells us that such an organization will be created. It will work in close association with the Red Cross "civilian relief" in looking after the families of soldiers and sailors in the matter of medical attention.

One other problem of the Surgeon-General's Office is that of the selection of the soldiers for the next army. The medical profession has realized that the medical examination of the men for the first army was not 100 per cent. efficient. Too many men were either carelessly examined or not examined at all and sent into camp only to be returned. Therefore there has been planned the creation of a medical advisory board to the government. It has been requested that a member of the Medical Officers Reserve Corps should be appointed in each state by the President, made a federal officer, and called to duty in his state for the purpose of aiding the governor of his state in the creation of the medical advisory boards in relation to the medical selective service law. Dr. E. P. Davis is the Medical Aid for the state of Pennsylvania. If he requests you to act as a member of the Medical Officers Reserve Corps do not accept because you are liable to be called to active service.

The young doctor between 21 and 31 who is called into camp within the selective service law and who has not applied for a commission, should at once make such application, have the commission recommended and when accepted the Surgeon-General will call him to duty. Another problem, and one in which the Surgeon-General has been particularly lenient, is presented in instances in which a young man has been rejected by the Medical Officers Reserve Corps but accepted by local boards and sent into camps. If that boy gets into camp and is accepted by the camp surgeon and kept there he can apply to the Surgeon-General for a commission and one will be issued.

Do not imagine for a minute that the Medical Officers Reserve Corps is filled. It is not. Every doctor qualified for service should apply for a commission. It means sacrifice, but this we are ready to assume.

Major Charles A. E. Codman: One phase of the work which the Pennsylvania State Committee of the Council of National Defense, Medical Section, is doing at the present time is that of taking not only the census of the physicians of the state, but of obtaining information relative to their work. When the Surgeon-General wants to know, for example, how many men in Pennsylvania are practicing a specialty, the statistics are immediately available. Every man in the United States is being listed and the work as carried on in Pennsylvania is being duplicated by every state in the Union. We may feel proud that Pennsylvania stands at the head of the list, due to the volunteer work of our men.

SOMERSET—NOVEMBER

The Somerset County Medical Society met at the Rockwood House, Rockwood, November 20, in the last regular session for the year. As this is the time we close all business for the year and elect officers for the coming year there was no scientific program. We had plenty of business to fill all the time at our disposal because of trains from one to one and a half hours late. Taking this fact into consideration there was a good turnout of members, although quite a few living in close reach by private car did not attend. Officers for 1918 were elected. A rising vote of thanks was tendered to Cambria County Society for the cordial reception, the courteous treatment and the splendid banquet given to the members of this society on the occasion of a joint meeting with their society in September. This is our first meeting since that occasion.

This society will remit the dues of all members in the active service of the country, and in accordance with action taken by the state society at Pittsburgh we are excused from the *per capita* assessment. Because of this, and the increase in the price of stationery, printing, postage, etc., our annual dues have been increased from $4 to $5 for the year 1918.

After the transaction of business several cases were reported. (1) One case, the victim of a railroad accident who was caught between cars, showed on examination no external sign of injury, no contusion or abrasion, no soreness. The patient, who was sent to a hospital as soon as possible, vomited liquids given on the way. There was some shock; in five or six hours he became tympanitic. On opening the abdomen it was found that the jejunum was almost pinched off by contact with the vertebra. At the time of this meeting there had been no further report of the case. (2) A boy was kicked in the abdomen by a horse. On examination no external evidence of injury was found. Within twenty-four hours as the boy sat at the table to eat he became tympanitic. The abdomen was opened, intestines found to be ruptured in a few places; patient died in forty-eight hours. (3) Boy struck the curb while coasting. After reaching home he vomited; physician was called and advised sending patient to the hospital. As there was no temperature, the father thought the boy all right, but he was sent to hospital the next day and on opening the abdomen a blood clot from a ruptured spleen was found. The patient recovered. (4) In a case of diphtheria in a man 32 years old, physician was called and gave 5,000 units of antitoxin, repeating the dose in three days. Throat conditions were satisfactory so far as clearing up was concerned but paralysis of throat set in and patient could not swallow; he died in a few days. These cases could not be discussed for want of time but are more or less interesting. Doubtless there will be papers on like subjects during the year.

H. C. McKinley, Reporter.

NECROLOGY

In Memoriam—Americus R. Allen, M.D.

With sadness and regret the members of the Medical Society of the State of Pennsylvania, during its sixty-seventh annual session, received the news of the death of Dr. Americus R. Allen of Carlisle. As members of this society we deeply grieve over the loss which the society and the profession has sustained. He held to a notable degree the affection of the members of this society. The familiar salutation "Hello, Allen" was missed and will be missed for many meetings.

Whereas, He was a most genial man, a thoroughly true friend, and well equipped by nature and by training for the work of his choice; he had from hard and constant study, unremitting devotion to his profession and fidelity to his patients, rightly attained high and honorable success; at the time of his death he was chief surgeon to the Carlisle Hospital, which he did so much to found and bring to the first rank; he was president of the Staff and Training School for Nurses of this hospital, and local surgeon for the Cumberland Valley Railroad Company; the great assemblage of sorrowing friends who attended the last sad rites was a mute expression of the high esteem in which he had been held in his community; therefore,

Resolved, That the Medical Society of the State of Pennsylvania extends its sincere sympathy to Mrs. Allen, a devoted and helpful wife, and his son.

Resolved, That these resolutions be inscribed on the records of this society and that a copy thereof be sent to Mrs. Allen, and published in the society journal.

John B. McAlister.
Frank G. Hartman.

In Memoriam—Edmund W. Meisenhelder, M.D.

Dr. Edmund W. Meisenhelder, one of York's leading physicians, and an active member of the York County Medical Society, died suddenly of heart disease at the home, in York, of one of his patients to whom he was rendering, in consultation with another physician, his last professional services.

His death, which was witnessed by his son, Dr. Edmund W. Meisenhelder, Jr., was almost instantaneous. Although he had been in but moderate health for about three years, his sudden death was a great shock to his many friends, and doubtless was hastened by mental and physical overexertion in the struggle of ushering another life into this world while his own went out. It may be well said that our venerable and lamented professional brother passed away in the harness.

He was born February 22, 1843, and was the son of Dr. Samuel Meisenhelder, a prominent physician in East Berlin, who died in 1883. From his earliest days, Edmund W. Meisenhelder manifested an intense love of learning. The common schools from grade to grade he passed and in the year 1860 he entered Pennsylvania College at Gettysburg, and was graduated from that institution at the head of his class in 1864. After commencement day, he enlisted in Company D, 210th Regiment Pennsylvania Volunteers.

As regimental quartermaster sergeant, and later as second lieutenant of his company, he served in the Federal Army until his regiment was mustered out at the close of the war. After his return to civil life, he began the study of medicine in 1865, under the direction of his father, and was graduated from the Jefferson Medical College in the spring of 1868. From that time he was actively engaged in the practice of his profession, with his father until the spring of 1871 and since in York.

He was the first secretary of the York County Medical Society and served as its third president. Early in his years he also became identified with the Medical Society of the State of Pennsylvania and the American Medical Association.

To the marriage of Dr. Edmund W. Meisenhelder and Mariah Elizabeth Baughman have been born four children, three sons, representing the three great professions, the ministry, medicine and the law, and one daughter, a graduate from Smith College.

In faith like his paternal ancestry, Dr. Meisenhelder was a Lutheran, but was absolutely devoid of sectarian bias. He was one of the oldest and most active members of the Union Lutheran Church.

In politics he was a republican of the most independent and positive type, and when political issues of considerable moment were at stake he was ever an active participant on the side he believed, after careful and conscientious consideration, to represent patriotic principles of justice and right. He had the courage of his convictions and with voice and pen was fearless in his denunciation of political chicanery, corruption and fraud. He was a positive, logical and forceful speaker and writer and a number of his addresses and papers contributed to our society for elegance of diction, scientific and classic thought were easily among the ablest contributions.

He has been an active member of the York Hospital and Dispensary Association since the time of its foundation in 1880. He was one of the first to be appointed as a United States pension examining surgeon, which position he filled for more than twenty years.

He was, however, essentially a student of medicine, well read in its literature and always abreast of its progress, but amid the cares of a busy and exacting profession, he nevertheless found time for extensive reading and he was always well informed on the topics of the day. In the years which have elapsed since he entered on his professional career, he has been active and energetic in the discharge of its varied duties. This conscientious devotion to his work characterized his entire life, and has brought to him large responsibilities, leaving little time for rest and the cultivation of other fields of endeavor which he loved. He was one of the "old school of the family doctor" which, unfortunately, is all too rapidly passing. Into his life work he has steadily endeavored to infuse all the good that can come from the close association of the thoughtful mind, the feeling heart and the helpful hand.

He who was so mindful of his duties toward men could not be otherwise than humble and true in his fidelity to God. He fulfilled his duties to society by his good example. Therefore, his life was pleasant and tranquil and his death full of peace, and he is mourned by the friends to whom he was endeared, by the profession he adorned, by the community he benefited.

It becomes us, the members of the York County Medical Society, who have enjoyed the advantage of association with him in life, to strengthen and extend the influence of that life to the honors we pay to his memory. Therefore, be it

Resolved, That in the death of Dr. Edmund W. Meisenhelder, the York County Medical Society has lost one of its oldest, highly esteemed and most prominent members; the community in which he lived, a warm-hearted, patriotic and altruistic citizen, whose life has been largely and zealously devoted to the good of his fellow man. We deeply mourn the loss of the fellowship and cooperation of one who has earned for himself deservedly high honors as a practitioner in his profession, and whose labors for the welfare of suffering humanity have always been tireless, unselfish and genuinely sympathetic. His memory will long be cherished with the fondest recollections.

Resolved, That we extend to the surviving members of his family our heartfelt sympathy in their bereavement, that the York County Medical Society hereby instructs its secretary to record on the minutes of the society, a minute of these resolutions; that the same be published in the Pennsylvania Medical Journal, and that a copy be sent to the bereaved family of our deceased colleague.

December 3, 1917.

Isaac C. Gable.
Charles Rea.
J. Frank Small.

THE PENNSYLVANIA MEDICAL JOURNAL
Official Organ of the Medical Society of the State of Pennsylvania

VOLUME XXI
NUMBER 5
ATHENS, PA., FEBRUARY, 1918
SUBSCRIPTION:
$2.00 PER YEAR

ORIGINAL ARTICLES

DYSENTERY AND ITS RELATION TO CAMP LIFE*

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WASHINGTON, D. C.

The subject of dysentery is, of course, a large one; and it is possible to refer to only a few points in connection with it. There is a large number of causes of dysentery, but in the main we are interested in two forms only: bacillary dysentery and amebic dysentery.

In bacillary dysentery there is nothing to add to what we have known for a number of years. Bacillary dysentery is the common dysentery of armies; and Ledingham and Wenyon[1] estimate that about 80 per cent. of the acute dysentery in the English army on the eastern front has been bacillary dysentery. Bacillary dysentery, in epidemiology, is practically the same as typhoid fever; that is, contact, flies and water. There are some differences in the spread of bacillary dysentery; the organism is not in the blood and it does not appear in the urine, it is spread only in the feces. Again, the organism does not withstand outside influences as well as does the typhoid bacillus. Finally, the convalescent does not remain a carrier for more than a month, and we do not have the chronic carriers as we have in typhoid and paratyphoid.

There is one little point in connection with making the laboratory diagnosis of bacillary dysentery that must be impressed on everyone. That is that the dysentery bacillus does not withstand outside influences well. There is no use in sending a stool to a laboratory a number of days away, and expecting to get a diagnosis of bacillary dysentery from that stool. The dysentery bacillus dies out, and we do not get it. Typhoid bacilli will last, and the stool can be sent some distance.

So, one of the things we find is that the dysentery stool must be examined on the ground; the laboratory must be right there. This is perhaps the reason why there have been a great many failures to find the dysentery bacillus in stools where the case was very probably one of bacillary dysentery, even on the ground. It was not realized that it was necessary to examine the stool within a few hours after it was passed. It is probably more important to examine the stool promptly in bacillary dysentery than it is in amebic dysentery.

Another thing is that the mild cases (we are not much concerned with carriers in bacillary dysentery) and the simple diarrheas are very commonly due to the dysentery bacillus, and an epidemic of bacillary dysentery is started before we realize it. When we get some diarrheas among the men, all of us are inclined to think, and hope, that it is simply a diarrhea due to food. We must look at it the other way: consider that a diarrhea is due to the dysentery bacillus unless we can prove that it is not. In that way a lot of dysenteries are picked up in the simple diarrheas and mild dysenteries that are ordinarily not considered as due to the dysentery bacillus.

So, there is practically nothing to add on bacillary dysentery; simply that it is the common dysentery in armies, and has been so back through the ages.

But, in amebic dysentery, we have learned a few points that are worth spending our time on this morning. About 20 to 25 per cent. of the dysentery on the eastern front has been amebic; and that percentage appears to hold pretty well around the Mediterranean.

Amebic dysentery has always caused a lot of trouble in our army, especially in the Philippines; and we had a little epidemic on the border in Texas in the summer of 1916. Under the conditions under which we have operated, amebic dysentery has been comparatively common in our army; and, with its tendency to recur, liver abscess, and the invalidism, it has actually caused more deaths and more invalidism with us than has bacillary dysentery. It happens that we have been fortunate and have not had any large amount of Shiga dysentery. So, amebic dysentery has been a very important disease with us.

One of the important things that has developed in the past few years is the knowledge that carriers are very common in amebic dysentery. While, in bacillary dysentery we are not worried about carriers a month after the man is clinically well, in amebic dysentery we have a large number of carriers. And there is a large number of men who are carriers of the cysts of *Endamoeba histolytica* who have no history of dysentery at all.

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* Read at the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

[1] Ledingham, J. C. G., and Wenyon, C. M.: Dysentery at Gallipoli, Brit. Med. Jour., 1917, ii, 29.

Craig[2] studied the outbreak of amebic dysentery along the Texas border in 1916, and came to the conclusion that carriers were responsible for the outbreak, and that flies transmitted the infection.

The English[3] have analyzed some of their records, and I will give one table of what they found at one hospital. There were 200 patients in the hospital, representing various diseases and wounds. A routine examination of the stools of the 200 patients showed that 11 per cent. of them had *Endamoeba histolytica* in their stools. Then the 200 patients were classified as dysenterics and nondysenterics. Of 90 dysenterics, 10 per cent. had *Endamoeba histolytica* in their stools; and of the 110 nondysenterics, strangely enough, 12 per cent. had *Endamoeba histolytica* in their stools. Again, the 200 patients were classified as all intestinal ailments and those without intestinal ailments. Of 130 with intestinal ailments, 8.2 per cent. had *Endamoeba histolytica* in their stools; of 70 without any history of intestinal ailment (wounds, etc.), 15.7 per cent. had *Endamoeba histolytica* in their stools. That is, in that particular hospital, it turns out that the nondysenterics had a higher percentage of infection with *Endamoeba histolytica* than did the dysenterics; and the patients without history of intestinal ailment had a higher percentage of infection with *Endamoeba histolytica* than did those with a history of intestinal ailment.

In Egypt, Wenyon and O'Connor[4] made a routine examination of the stools of the soldiers in one of the garrisons. In 1,979 healthy British soldiers they found 106 carriers of *Endamoeba histolytica;* and only 16 men of that 106 had any history of dysentery; and none of them were sick at the time of this routine examination. So, in that 2,000 men, there were 90 who had no history of dysentery but were carriers of *Endamoeba histolytica.* In the carriers, the virulence of the endameba is maintained, and the organism is capable of producing dysentery in these carriers or in men who take the organism into the intestinal tract.

Then, in order to study the percentage of infections among healthy natives, and compare it with the percentage of infections among the English troops, the stools of 534 healthy natives in one of the prisons in Alexandria were examined. It was found that 13.5 per cent. of those men had *Endamoeba histolytica* in the stools.

From all of this it appears that as high as 10 or 15 per cent. of the men who have been in the tropics for six months to a year are carriers of *Endamoeba histolytica,* regardless of whether they have been sick at all. The cysts that they are passing in the stools are virulent and may cause dysentery in any person who takes them into the alimentary tract, or may cause dysentery in the carriers themselves.

This is of importance to us at once. There was an outbreak of amebic dysentery among our troops on the Texas border in the fall of 1916, there being about 160 cases. Craig considers that the outbreak was due to carriers; and if the English findings hold good it means that a large percentage (anywhere from 5 to 10 per cent., or even higher) of our men who were on the Texas border in the fall of 1916 are now infected with *Endamoeba histolytica,* or were when they left the border. These men have gone all over the country, spreading these cysts; and that means that very probably we will get a number of those carriers into our camps with the troops that are going in now. That is a serious proposition. Suppose we have a number of carriers of *Endamoeba histolytica* among the men who are going into camp, and these men are in a district and under conditions where transference of the amebic infection is possible. In six months or a year, approximately 10 per cent. of the men will be carriers of cysts of *Endamoeba histolytica.*

And the question that confronts us is how to handle the situation. The stools of all food handlers, cooks, waiters, water wagon drivers, and others who handle food, are being examined for typhoid and paratyphoid bacilli, dysentery bacilli, *Endamoeba histolytica,* and the ova of worms. It is out of the question to undertake to examine the stools of the entire army for these organisms, so work is being concentrated on the people who are actually handling food. Already a few carriers of *Endamoeba histolytica* have been found at some of the laboratories. Of course, the work is only started, as the men are just getting into camp.

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[2] Craig, C. F.: The Occurrence of Endamebic Dysentery in the Troops Serving in the El Paso District from July, 1916, to December, 1916, Mil. Surgeon, 1917, xl, 286.

[3] Medical Research Committee: Reports on Investigations in the United Kingdom of Dysentery Cases Received from the Eastern Mediterranean. 1. Amebic Dysentery and the Protozoological Investigation of Cases and Carriers. Special Report Series, No. 4. Published by His Majesty's Stationery Office, London, 1917.

[4] Wenyon, C. M., and O'Connor, F. W.: An Inquiry into Some Problems Affecting the Spread and Incidence of Intestinal Protozoal Infections of British Troops and Natives in Egypt, with Special Reference to the Carrier Question, Diagnosis and Treatment of Amebic Dysentery, and an Account of Three New Human Intestinal Parasites, Jour. Royal Army Med. Corps, 1917, xxviii, 12.

The carrier question is rather important. If the carriers will clear up quickly, or if we can clear them up quickly, the matter will be easy to handle. Apparently it is very difficult to clear them up. Without treatment these men go on for months, or perhaps years, passing the cysts of *Endamoeba histolytica*. And no treatment so far used will clear up all of them.

Then it is important to know how much danger these carriers are; and some light can be obtained on this question by learning how the cysts of *Endamoeba histolytica* behave under various conditions. Wenyon and O'Connor[5] found that these cysts are very quickly killed by drying; and there is little danger from the cysts being blown about in the dust by the wind. It was also found that these cysts are killed very quickly by the ordinary antiseptics. However, free chlorine in water to a strength of 1 in 10,000 has no effect on the cysts even after several hours' exposure. It was found that the cysts of *Endamoeba histolytica* will live in water for at least a month, and are infectious at the end of that time, showing that if the water supply becomes contaminated, that contamination may last for a long time.

Since flies play such an important part in the spread of camp diseases, some experiments were made with flies.[6] Flies were fed on feces; and it was found that the ordinary fly would take in feces, and pass the material unchanged in its feces in five minutes. Of course, the fly feeds on feces and then on our food. When the fly is feeding it defecates very frequently, and can pass material through unchanged. This is of importance in the spread of a number of camp diseases; but since we are speaking of amebic dysentery, it is of particular importance here. The cysts of *Endamoeba histolytica* show no change in the intestine of the fly. Ordinarily they pass out by the end of forty-eight hours, and they show no change.

So, the fly probably does not spread the infection on its feet unless it goes directly from feces to food; because the organism does not stand drying; but the fly certainly spreads the infection by taking the cysts in as it feeds on human feces, and then defecates on the food.

In this same work, wild flies were caught around the jail and examined. It was found that a number of these wild flies had cysts of *Endamoeba histolytica* as well as various worm ova in their intestines. From this work it is considered that flies are important in the spread of amebic dysentery.

The question remains as to what we are going to do about the carriers. And this is combined with the treatment of the cases. When emetin was first used in the treatment of amebic dysentery, it was thought to be a specific, and to give a cure in one course of treatment. It was also thought that it was only necessary to continue giving emetin until the man was well. But it is not so easy.

In the first place, emetin is a toxic drug,[7] and there have been some deaths from it as a result of continuing the use of the drug too long. And unfortunately one of the first and prominent symptoms of emetin poisoning is diarrhea. In treating a case with emetin, the man develops a diarrhea, and the emetin is pushed, as it is thought the dysentery has returned. Instead of that, the man is poisoned from the emetin; and men frequently die if the emetin is kept up under such circumstances. What is preferred now is to give a man not over ten grains of emetin in one course, and then to stop it. Ordinarily the dysentery will have stopped; but even if the dysentery has not stopped, it is necessary to stop the emetin. Ipecac can be given in some other form, and the man is given a rest from emetin for a month. Then another course of emetin can be given. If a patient receives 25 or 30 grains of emetin in one course there is danger of emetin poisoning and even death.

But after all this treatment, we find that the man remains a carrier of *Endamoeba histolytica*. That is, emetin hypodermically does not clear up the carriers.

Strangely enough, as we see from the records of the English, no more of the dysentery cases remain carriers than there are carriers among the nondysenterics and healthy men. That is, we have a large percentage of carriers among healthy men; and again we are confronted with the question of what to do.

Work is being done, but there is as yet no solution. The double salt of bismuth and emetin iodid has been used, and is being used; and it seems to give fairly satisfactory results. It will not clear up all of the carriers; but it seems to clear up about 60 to 75 per cent. of them. That leaves about 25 to 40 per cent. of the carriers that we are not able to clear up.

The double salt of bismuth and emetin iodid is given, one grain at a dose, three times a day for about twelve days; that is, about 36 to 40 grains are given. The double salt does not produce poisoning as does emetin hypodermically, and, as I said, will clear up 60 to 75 per cent. of the carriers.

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[5] Wenyon, C. M., and O'Connor, F. W.: Op. cit., 698.

[6] Wenyon, C. M., and O'Connor, F. W.: Op. cit., 689.

[7] Johnson, H. H., and Murphy, J. A.: The Toxic Effect of Emetin Hydrochlorid, Mil. Surgeon, 1917, xl, 58.

There still remains a number of carriers that do not clear up; and we must decide what to do with them. Craig[8] advises that they be discharged, when it is definitely decided that they will persist as carriers.

Wenyon and O'Connor[9] advise that when a man is clinically recovered from his dysentery, and physically able to do duty, he be sent back to duty. For one thing, men are needed, and that man cannot be held indefinitely in the hospital or in quarantine. The man cannot be cleared up. On the other hand, there are more carriers among the men in the camp than there are among the men who are being returned to the camp from the hospital or convalescent camp.

It seems advisable to treat the cases with emetin until the dysentery is stopped, clear up all carriers possible with bismuth and emetin iodid, and return them to duty; taking care that the men who continue as carriers do not handle food.

This point of carriers is the important development in the past few years in connection with dysentery in the army.

Just to sum up: In bacillary dysentery there is practically nothing new. We have to lay stress on the danger of cases of diarrhea and mild cases of dysentery in which the patients do not report for treatment; and in the laboratory diagnosis, to examine the stools promptly after they are passed.

Coming to amebic dysentery, we have to examine every person who handles food, pick up the carriers, and either clear them up or take them away from handling food. We must try to clear up all carriers among our cases of amebic dysentery; and, if we send carriers back to duty, we must see that they do not handle food and must see that they are properly instructed as to the precautions necessary to prevent the spread of their infection to others.

Finally we must be careful in giving emetin, and not give over 10 grains in one course. If it is necessary to give more treatment, ipecac in some other form can be given for a month, after which time another course of emetin can be given.

Bismuth and emetin iodid give fair results in the treatment of carriers.

DISCUSSION

Dr. Victor C. Vaughan, Ann Arbor, Mich.: I can only emphasize some of the things of which Colonel Whitmore has spoken. I think he has given us the latest and the best information in every particular.

Bacillary dysentery is a disease widely disseminated over this country. We must recognize this fact. Twenty or thirty years ago bacillary dysentery was one of the great plagues of certain sections of this country. I have seen it in Missouri and in southern Illinois where it killed large numbers of children in certain seasons. It went by different names in different places. Of course we knew nothing about the bacillus, but we are pretty sure now that it was bacillary dysentery. Bacillary dysentery decreased in this country (and I dare say in other countries as well) with improved methods of disposing of fecal matter. With the introduction of the water carriage system, when towns and villages did away with the indiscriminate deposit of fecal matter over the surface, as once practiced, bacillary dysentery grew less and less.

The fly feeds on the stools and scatters and transmits the organisms, but I want to call attention to the fact that the fly is not the only carrier that is concerned in the dissemination of bacillary dysentery, typhoid fever and other intestinal diseases. When Reed, Shakespeare and I wrote our report on typhoid fever in the American Army in 1898, we concluded from the best data obtainable that about 15 per cent., if I remember correctly, of the typhoid fever was due to flies or was disseminated by flies. The public and the medical profession fastened their attention on the fly, which is all right, and I want to say that one of the most gratifying things that has occurred in this country in the last few years is the diminution in the fly. But 15 per cent. was due to flies and 64 per cent. was due to contact. That 64 per cent. was due to contact has been overlooked. Now what do we mean by "contact"? What had contact to do with bacillary dysentery in our primitive towns? The fecal matter was deposited in fence corners and other places, and scattered generally. Children and animals tracked this fecal matter into the houses, and the hands, the clothing, the bedding, everything became infected.

There are all kinds of explanations as to the wide prevalence of typhoid fever in our armies in 1898. One man said that it was due to the fact that northern men were encamped in southern territory, that they were unacclimated, but the regiments that furnished the largest percentage of typhoid fever never crossed the Mason and Dixon line. The Twelfth Minnesota Regiment encamped on the fair grounds at St. Paul for a while, and then at Fort Snelling; and some New York Regiments were at Camp Black, and they had just as large a percentage of typhoid fever as any regiment that went to Chickamauga or Jacksonville. There is naturally, in all of us, a proness to ascribe the ills which come to us to the locality where they happen, the evil genius of the locality. Men with stars on their shoulders at Chickamauga asked us in 1898, "Do you know what the word 'Chickamauga' means?" "Why no," we did not know what the word meant. "Why, it means 'valley of death, river of death,' and this is not typhoid fever or malaria; it is Chickamauga fever."

There is no part of God's footstool but what men may pollute to so great an extent with infected feces that it may become a graveyard. That happens in bacillary dysentery and with typhoid fever. Take, for instance, a series of tents along in a line. A man may have come from civil life probably with typhoid fever, and was in one of these tents. Now all of these men were drinking the same water, eating at the same mess and living under the same condition. There developed a case of typhoid fever. Where did the next case of typhoid fever appear? Although they were all drinking the same water and eating the same food, and to a certain extent visited by the same flies, the next case occurred in the same tent, and out of eight or twelve men in a tent probably two-thirds of them would be down with typhoid fever before there was another case in the regiment. It was contact. The men soiled their clothes; they soiled their hands; they soiled their blankets; everything becames infected, and then it spread from one to another.

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[8] Craig, C. F.: Op. cit.

[9] Wenyon, C. M., and O'Connor, F. W.: Op. cit., 34.

We went into that investigation believing, as everyone believed at that time, that typhoid was, in 90 per cent. of the cases at least, disseminated by water. We soon found that was wrong. Then we saw that men who ate in screened tents were less liable, had a smaller percentage of infection, than men who ate in unscreened tents. Then we spread lime on the fecal matter, and we saw the flies with their feet whitened with lime walking over the food. And so it was easy enough to say that flies did it. But the profession and the laity have not held to the fact that 64 per cent. were not due to flies, nor to water, but to contact; and I want to say that 8 years after this report was published, a German report came out in which this report was never mentioned, and I think it gave the number of cases due to contact in Germany as 63 per cent. Now whether they had ever seen our report or not I do not know, but it is all the more valuable if they had not seen it.

We did not stop typhoid fever in the American Army in 1898 until the tents, the clothing, everything was disinfected. At Chickamauga every morning 100 or 200 men were drawn from the line and sent to Sternberg and Leiter hospitals to act as orderlies through the day. These men, ignorant of course of all things pertaining to infection, went to these hospitals, handled the bed pans and so forth, went back at night, and, often without even washing their hands, handled the food, passed the food to others, took it themselves, no doubt with fingers partially soiled by handling blankets and everything of that kind. During the Boer War the same thing was done. Blankets infected in South Africa were sent to London and sold months later, and the people who bought them and used them developed typhoid fever. That was due to contact; infection of clothing, person, blankets, everything of that kind.

This is something that will have to be looked after. We are going to have both kinds of dysentery. It is absolutely impossible to exclude absolutely either of these infections from our camps and cantonments. As Colonel Whitmore has said, a considerable number of those who were on the border became infected with amebic dysentery, and they will remain carriers and will be scattered through the army. Gathering together millions of men from all kinds and walks of life, from all localities, will act as a great drag net to bring in every kind of infection. The army is asking the cooperation of the Public Health Service, the state and local boards of health, and in every cantonment there will be a map of the area from which the soldiers of the cantonment come, constantly before the chief medical officer. It is expected that every local health officer, when infection, mild or severe, appears at any place, will immediately telegraph that cantonment. Then the chief medical officer will stick a red pin, or a blue pin, or a yellow pin in that locality; and that means that he must watch out for anybody, troops, visitors or anybody else that is coming from that locality. All these things are to be done, and every attempt is to be made to keep out infection; but we are going to have it with all the efforts that we can possibly make—more or less of it.

I believe Colonel Whitmore will agree with me about another thing, but I think he did not emphasize it. While amebic dysentery is much more common in southern than in temperate and northern latitudes, there are sporadic cases of it all over the country. The report of the discovery of ameba as a cause of dysentery came to the scientific world almost simultaneously from Petrograd and from Alexandria in Egypt. It is a question in which one of these places the ameba as a cause for dysentery was first made known. As we all know, there are scattered cases of amebic dysentery all through the country, and a larger number of the bacillary dysentery.

Another thing, amebic dysentery has been rather widely disseminated in France, not only along the trenches where the fighting has been, but in certain industrial areas, especially where men from Africa and other tropical countries have been brought to France and have been employed in one way and another. So we will have to contend with these two forms of dysentery when our troops go to France.

Colonel Whitmore said nothing about the use of the antiserum. I hope he may when he closes the discussion.

Dr. C. C. Mechling, Pittsburgh: I would like to ask Colonel Whitmore if he has ever observed edema of the limbs, upper and lower, following the administration of emetin hydrochlorid. I have had three patients out of a series of twelve in the last two years in whom edema occurred in the lower limbs. Whether or not it was a concomitant condition I am not able to state. I could ascribe no other cause for the edema.

Lieut.-Col. Whitmore, closing: The doctor asked about edema of the limbs, following the administration of emetin. That is one of the evidences of emetin intoxication. I mentioned the diarrhea because it is one of the things that leads us astray: we may think that the dysentery is back again.

The other symptoms are weakness in the muscles in the back of the neck—the patient cannot hold his head up, but lets it droop forward; and there is pain in the back of the neck. Then there is weakness and pain in the muscles of the legs. There is weakness of the heart, with shortness of breath. There is edema of the face[1] or of the legs. There may be weakness, pain and edema in the arms. I should think that the doctor is right in saying that the edema that he speaks of was due to the emetin.

Dr. Vaughan said he hoped I would speak about serum therapy in dysentery. Naturally, I am a serum man; and it would take me more than twenty minutes to tell how much I think of serum.

We have been rather fortunate in not having very much Shiga dysentery; but I think that any one who has to deal with Shiga dysentery will be very glad to use serum. I had occasion to investigate an epidemic of Shiga dysentery in the Philippines. There was an epidemic of dysentery in the provinces, and the mortality was so high that the question rose whether

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1. Dalimier, R.: Toxicite du chlorhydrate d'emetine, Press Medicale, Paris, 1917, xxv, 33.

it was an epidemic of cholera that was being reported as dysentery. I was sent to investigate the epidemic. It was an epidemic of Shiga dysentery; and the mortality was as high as I have seen in cholera. I never saw a child get well, and very seldom did I see an adult get well. And there were whole families down with dysentery; all of the children dying.

The Tropical Board had occasion to investigate an epidemic of bacillary dysentery of the Shiga type, in one of the islands of the Philippines; and in their report they say that they never saw a convalescent.

Fortunately for us, in our army, and in this country, we do not have much Shiga dysentery to deal with; it is mostly the Flexner and "Y" types. Those types are not so virulent as is the Shiga type. The Flexner and "Y" types are classed as the nontoxic types, and the Shiga as the toxic type, and that comes pretty nearly expressing it.

With dysentery due to the Flexner and "Y" types, we are not likely to use serum very much, and I think that is one of the reasons that physicians in this country have not paid much attention to serum in the treatment of bacillary dysentery. But where one has to deal with Shiga dysentery, as we did in the Philippines, and as they do in Japan, he will certainly want to use the serum.

Here, as everywhere else, if one is going to use the serum he must use it. There is no use in giving 5 or 10 c.c. of serum subcutaneously. I am not referring to diphtheria antitoxin, but to dysentery serum, pneumonia serum, and those sera. It is necessary to give 100 c.c. of dysentery serum, and to give it intravenously. There is no use in giving any of these sera subcutaneously and in small doses. When dysentery serum is given intravenously in large doses it gives excellent results in bacillary dysentery.

CRACKED DISHES A MENACE

By Samuel G. Dixon, M.D.
State Health Commissioner

During a great international war such as we are in at present, we are prevented from taking ordinary precautions to guard against the transmission of disease. Because of the great interchange of men from all parts of the world we have more communicable diseases in our midst than ever before. This behooves the individual to look out for himself; otherwise he is apt to fall a victim to one of the miserable diseases which are being carried by men from all parts of the world.

In some of these places from which we are importing labor, chronic and disabling diseases are very common. For example, trachoma and ulceration of the mucous membrane of the eye, which is easily transferred from one to another, which terminates in blindness. It was only a short time ago that our government had to return a lot of laborers who came from one of the most infected trachoma centers in the world. Many of these men had gone to restaurants for their meals. Their fingers were infected from rubbing their ulcerated eyes and from these fingers they imparted this disease, trachoma, to the forks, spoons and knives and frequently to the cups and plates, often deeply fissured with cracks where the ordinary washing in cheap restaurants is not sufficient to disturb the germs which produce the disease.

Every individual, therefore, eating at a public restaurant should enter a protest against cracked cups and plates that this one source of danger might be eliminated.

MINOR EYE INJURIES AND THE WORKMEN'S COMPENSATION LAW *

LESTER E. SCHOCH, M.D.
SHAMOKIN

After the Workmen's Compensation Law was conceived and born, and when it was signed by the Governor and became a law, then the medical profession received such a blow that we had to stop, look, and listen. We stopped, for our ideals were shattered. The practice of medicine was commercialized. Contracts were made between the doctors and the corporations. A select few of the doctors would get the cream and the rest get nothing. We looked, when we found the law was drawn up without consulting the medical profession. We had to take what was handed to us. We had no redress. We listened, and what did we hear? Complainings from all sides. Some saying that their surgical practice would go to nothing; some felt they would have to go into other locations; some would get into other businesses. The hospitals would be overcrowded. The doctor outside the elect fold would get no pay for what he did.

Medical journals and medical societies discussed the law pro and con, until there was nothing more to do or say.

Now, after about eighteen months of trial, the Workmen's Compensation Law has done many great things, in many ways. It has reduced the income of some doctors, while on the other hand it has increased the income of many. It has given to the injured employee better and quicker relief. The employee has a clearer conception of what safety first means. It has helped to weld a closer union between employer and employee. The injured person knows that he will be treated free for the first two weeks, and longer, if necessary, by some companies, and if disabled or for the loss of a member he will get compensation.

The employer knows that he gets better and quicker returns by having the accidents treated promptly. It took the workman many months before he understood what the law meant for him. He failed to report many of his minor accidents, and even today many do not report, yet, with it all, he has gotten himself into line, and the law is working out to his advantage.

I know of no injuries that befall the average workingman in which so little attention is paid

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* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

to, and so little is done for, than the minor injuries of the eye. If he injures any part of his body, he will protect it in some way, but with an injured eye he will do little or nothing.

CONTUSIONS OF THE EYEBALL

In and around the hard coal mines, contusions are frequent and daily occurrences, some slight and hardly worth mentioning, while others are severe and serious, because anthracite coal is hard and brittle and when struck with either pick or sledge will break and scatter in all directions, the miner's face becoming the target. This is still more evident in breast mining, as the space in which to work is small, and the eyes are exposed to the scattering pieces of coal.

Contusions may also cause rupture of the iris, dislocation of the lense, hemorrhage into the vitreous and with opacities, rupture of the retina and choroid, or even of the eyeball, and some disturbance in the macula lutea. Vision is always blurred to a greater or lesser degree following a contusion. This is due to the general shaking up of the eye structures.

Some months ago, the *New York Medical Journal* abstracted a review of a paper on "Contusions of the Eye," by Professor Haab, in which it states that in over one hundred such eyes examined he found that in the region of the macula lutea there was a disturbance with distinct, though faint, irregular lines and curves, and even breaks in the membrane. In all such eyes examined the vision was defective, with no other eye condition found to cause this defect of sight. I have seen such changes in a few such eyes examined.

INJURIES TO CORNEA, CONJUNCTIVA, AND DEEPER STRUCTURES

These accidents are very frequent and daily occurrences, and are the ones that give the eye surgeon his greatest concern; cause him to lose sleep, sit up nights, think, study, and delve into the secrets and mysteries of the present, past and future to get something that will save the sight of an eye that is going to the bad. The lesser corneal injuries are the ones most frequently seen, have the least attention paid to them, and are the ones that give the greatest number of corneal ulcers, due to the neglect of the injured workman and the lack of treatment. Many corneal injuries are slight hairline cuts, not deep; abrasions, like a scraped surface; skips, when a small piece of corneal tissue is completely cut out, and the deeper, and wider ragged lacerations sometimes extending completely through the cornea into the iris, lens capsule and lens itself. Powder burns and fine rock and coal from exploding charges cause the greatest injury of corneal tissue. The force causes the fine pieces of rock and coal to pepper the face and eyes of the workman. The space between the lids and eyeball become filled with finely powdered rock and coal. The cornea tissue is filled, roughened and lacerated with small cuts and punctures. The luster of cornea is gone and the eye appears as if sight was no more. The bulbar conjunctiva and the lining of lids are punctured, lacerated, and rolled up as a scroll. Also with these explosions are seen punctures of cornea into anterior chamber, iris, lens, and sometimes complete destruction of the eyeball. Corneal injuries that extend below Bowman's membrane will invariably develop into an ulcer, due to the great amount of traumatism to the tissue, the force of the foreign body, and the infection that is carried along and enters below this protecting membrane. Vision is more impaired because the injury is deeper and more extensive. At the bottom of the cut will be seen, on close inspection, a semitransparent infiltrate of foreign material extending in one or more directions into the surrounding deeper corneal tissue; and should the injury be near to or over the pupil space, the resulting scar will cause partial or complete loss of direct vision, which means an eye lost. The lesser injuries to the bulbar conjunctiva are small punctures and lacerations, with the fine pieces of rock and coal driven in under it. As a rule these injuries are not serious, and cause very little trouble, heal readily and only show the black and blue discolorations seen in miner's eyes.

The injuries to the cornea from pieces of steel, iron, emery scales, lime, cement, molten iron and lead, sandpaper dust, flying nails, bolts and nuts are familiar to all and only need to be mentioned to bring to your minds cases you have seen and treated.

I have noticed in some of my cases of corneal injuries that the cornea has a soft and boggy feeling, and a loss of that crisp and snappy tone when touched; especially so, in those eyes from which I have frequently removed small foreign bodies. I have also seen this in old miners' eyes who have had repeated injuries to the cornea. One case is that of a young rock man, from whose eyes I removed minute pieces of emery scales for the seventeenth time. His cornea has a decided boggy feel. His vision remained clear in each eye. These changes in the cornea are due to the structural composition of the scar tissue infiltrating to the deeper layers.

THE END RESULTS

The end results of all eye injuries are some impairment of function. These must be looked at from every side. The vision may or may not be diminished, depending on location and extent of the injury. Many of my cases show scars of cornea and other tissues of eye but are not causing any loss of function as far as sight is concerned or the earning capacity of the individual.

In contusions, I have the patient remain from work for one, two, or three days, depending on eye symptoms and the kind of work he does. Usually he returns after the second day, with good clear sight.

In corneal injuries from imbedded foreign body, not complicated, the patient returns the following day. In those more serious, the patient does not return in less than four or five days. Infected corneal cuts do not heal so quickly and nearly always the injured man remains from work for two to three weeks. Corneal ulcers cause much trouble with miners. It is hard to keep them away from their work; hard to get them to understand the seriousness of the eye condition. They will not carry out home treatment properly, and will drink while idle, and do everything they should not do, which retards resolution and healing. Such a person I keep from work from two to six weeks, or until the eye is healed and it is safe for him to return. Corneal ulcers always leave scars, and the location and density decides the future use of the eye, as far as compensation is concerned.

Many injured eyes become infected by a fellow workman who attempts to remove the foreign body with his tongue, match stem that he has pointed with his teeth, soiled handkerchief, safety pin, or a pocketknife.

The injured person demands the best kind of care and treatment, and the restoration of sight if possible. It will not do to leave to nature and take chances. The employer demands that his injured employee gets the best that can be had, for he pays the bill.

The compensation law also sets a price on all parties to the contract, and sees that the letter of the law is carried out.

It is my belief that the Workmen's Compensation Law is showing good results to both employer and employee. The men are returned more quickly to work, are better taken care of and are better satisfied. They think more of their employer, they observe safety first rules more readily, and recognize the advantages of all the safeguards thrown about them.

The employer sees a greater advantage. It has reduced the number of serious accidents, by making the men more efficient, and has saved him many thousands of dollars by having the injured treated at once, and reducing the time lost to both parties.

WHAT CONSTITUTES THE LOSS OF AN EYE

Will the test card answer it? Will a rule of thumb settle it? An eye with numerous nebuli of the cornea, or otherwise impaired, reducing the acuity of vision to 20/200, 20/150, 20/100, 20/40, or even 20/30, will that settle the question?

To my mind the question has many sides, and the individual case brings the answer. Much depends on the kind of work. Many vocations require very acute eyesight; many more, not so acute. Some persons are doing work that they hardly use their eyes to see what they are doing. Under ordinary reasoning, a useless eye or a sightless eye is a lost eye. The compensation law looks at an eye in about the same way.

With your permission, I will give you my conception of the answer. The loss of an eye, in a workman, is an eye so injured that, if the fellow eye is useless, or becomes so, from any cause, so that he can not make his usual wage at the same work he did before the accident, that eye is lost, even though some sight remains.

DISCUSSION

Dr. L. H. Taylor, Wilkes-Barre: It seems to me that the great point in these cases is to get the injured person himself to report at once. That is the difficulty. Now if all the employers were such as we have in our region (I mean the mining companies, with possibly one exception) I would say that they are very liberal, willing and anxious to carry out this law; but it very frequently happens in my experience that a man does not report until after a number of days, and then an injury that should have been treated and should have been well in one or two visits requires weeks and weeks for its treatment. Therefore a course of education is necessary among these people to induce them to report at once an injury to their eyes. We have cases again and again in which the companies are more than liberal; where they will go way beyond the two weeks and pay the doctor for his work, even when the strict requirements of the law would not compel them to do so.

What constitutes the loss of an eye is another important matter. We are sometimes required to answer a question something like this: "Is the sight fully destroyed?" Practically it is. There is no special useful vision, yet you cannot say it is absolutely gone. Then the next question is "Can the eye be further improved by treatment?" You have to answer that question "Yes" or possibly "Yes, by an operation; by an iridectomy," yet it is not advisable to do the operation. Why? Because the man is better off without that operation than with it. Oftentimes with a case of traumatic cataract some people go ahead and operate on that cataract when the other eye is perfectly good. The man is worse off after the operation than he is before. His eye is lost, and yet it is not lost, because there is a chance to restore vision in the future, and yet an operation is not advisable. I believe in an answer somewhat similar to that which the doctor has just given us, as to what constitutes the loss of his eye.

Dr. W. C. Posey, Philadelphia: Dr. Taylor has just raised a point. It makes a great deal of difference as far as the awarding of damages goes, whether a traumatic cataract is operated on or not. Without operation the eye is blind and the company is compelled to pay the employee a comparatively large sum of money; whereas if the cataract is removed and good vision obtained, the damages are comparatively small.

Dr. Taylor: Yes, but the man is worse off if you operate than if you do not.

Dr. Posey: No, unless you give him his correcting glass. In fact, the operation will benefit him by enlarging his field and enabling him to avoid future accidents.

Dr. Schoch: If you will allow me just a moment, I want to cite a case. A man came to me from an explosion in the mines, from a premature blast. He had a perforation through the cornea into the iris, into the lens, and a traumatic cataract developed forty-eight hours afterwards. The other eye had one or two injuries to the cornea, but they were very, very trivial; one left a little, faint nebula a little below and to the outside of the pupil space. I sent him to Philadelphia. They took out the cataract. I put on a cataract lens, corrected both sides and got his vision 6/12 in each eye, but he had diplopia at distance for about 20 feet, and reading 8 inches; he could not get rid of the diplopia, because that little film from corneal ulcer on the good eye caused the double vision. No glasses were ordered.

Dr. Posey: According to the present law, the employer's interests are looked after, that of the employee and the hospital as well. The doctor alone is neglected. What I would argue for is some way to insure payment to medical men for their services, irrespective of payment to hospitals, etc., and I sincerely trust that this society may take some action whereby this may be attained. In Philadelphia a great injustice is wrought, the hospitals having come to an agreement among themselves that they will absorb all of the $25 allotted to nonoperative cases and the $75 allotted to operative cases for payment of hospital charges. Even if the operation is performed and the patient remains in the hospital but a few days, they have actually the audacity to appropriate all of the $75, giving the surgeon in attendance nothing. I think, however, that they themselves see the injustice of this and will act otherwise shortly.

Dr. E. J. Stein, Lancaster: There have been at least six cases that I have had where the bill exceeded the $25 or the $75 mark. But the way the insurance companies that carry these cases have done has been to give a pro rata division between the doctor's fee and all other expenses. I think if Dr. Posey would look up the matter he will see that the hospital will not get all of the $75. That has been my experience.

Dr. Edward Stieren, Pittsburgh: There have been a number of cases recently in which the matter of traumatic cataract following industrial injury has come before the compensation board, in which it has decided that the man was entitled to payment for the loss of an eye, 125 weeks, half of his weekly salary, amounting usually to $1,250, irrespective of the degree of vision which this eye gets after the cataract has been extracted and a corrective glass has been put on, and I really think, sir, that we should take a stand in this matter that the compensation board should be instructed as to what would be considered a good result after a cataract extraction, either traumatic or otherwise. If it is in order, Mr. Chairman, I should like to offer a resolution:

Resolved, That this society recommend to the Pennsylvania Workmen's Compensation Board that resulting vision of 6/15 or better with a correcting glass after cataract extraction does not constitute loss of vision in this eye.

Chairman Heckel: Kindly hand the resolution to the secretary and he will convey it to the House of Delegates.[1]

Dr. G. H. Cross, Chester: I had a very interesting complication arise in a compensation case. I do not know whether you have had this experience or not. In January, 1916, an employee of a dredging company on the Delaware River, while working, repairing a pump, a small chip broke from the hammer or the pump, and he lost the vision of one eye. They paid him compensation and they paid him $400. Then he came into the office one day and presented me a letter from the company in which they said that they would refuse to pay him any more compensation because the accident happened on the navigable waters of the United States; that it came under the jurisdiction of the federal courts and they were going to put the question up to the compensation board of Pennsylvania to decide whether they should pay anything more or not. It was quite a new question to me.

Dr. E. B. Heckel, Pittsburgh: I make it a rule when I have a patient who has developed a traumatic cataract, not to consider the patient discharged until I am willing to say that he shall be discharged. If there is traumatic cataract I usually operate to remove it en masse, or wait for nature to dissolve and absorb it. I believe that is the proper procedure for this reason: It gives the patient the benefit of an enlarged field of vision, and it has been said on the floor here that if you do not make any attempt to correct refraction the patient gets very much better vision than he would with that eye blind, because it gives him the benefit of the entire field in that eye, which is worth a whole lot to a workman. There are other things in connection with the matter of what constitutes loss of an eye. So far as I am concerned individually I pay no attention to that at all. If the eye has any vision at all I simply make a record of it, if it is 20/1200, or whatever it may be. I don't think it is the doctor's business ordinarily to estimate for a lost eye, although if the vision of the injured eye is so reduced that if he were to lose the other eye he would be disabled or incapacitated from following his usual occupation, I think that ought to be considered a lost eye, even though he may have a vision of 20/200.

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[1] This resolution did not reach the House of Delegates and no action was taken by the society.

PITUITARY TUMOR—OPERATION BY TRANSSPHENOIDAL ROUTE *

FIELDING O. LEWIS, M.D.
PHILADELPHIA

In reporting this case of tumor of the pituitary body with hypopituitarism, the writer has been able to find but one other similar case mentioned in the literature, viz.: one reported by Cushing in his series of cases described in his excellent book, and grouped under cases in which both neighborhood and glandular symptoms are outspoken.

F. R., a farmer by occupation, aged 29, single, was referred by Prof. F. X. Dercum to the Nose and Throat Department of the Jefferson Hospital, for operation, in order to determine the character of growth of the pituitary body, which was diagnosed by him.

The complaint was headaches, hemianopsia, somnolence and adiposity. He has been a hard worker, farming since early childhood, and a man of good habits. He attributed his trouble to an accident, October, 1916, when he fell backward down a flight of stairs, landing on the back of his head. He was stunned, but not unconscious. One week after the injury he complained of a stiff neck, and had had severe headaches since the time of the fall. The headache was occipital at first, but later was more severe over the frontal region. There was no vomiting.

His vision became impaired at the time of the accident, and had grown progressively worse. He soon became slow of speech, forgetful, and very stupid.

On admission his physical examination revealed a well-nourished, healthy adult, white male, very fat. He was stuporous, from which he could be aroused with some difficulty.

Examination of abdominal viscera was negative; blood and urine, negative.

Roentgen-ray reports, by Dr. Manges, showed almost the entire bony floor of the middle fossa destroyed by pressure; sella turcica, the sphenoid sinus, and body of the sphenoid bone were entirely destroyed. There seemed to be a bulging forward into the pharynx. Eyes: partial primary atrophy of each optic nerve, without preceding neuritis; retinal veins engorged and tortuous. There was total anosmia, no epistaxis, no nasal discharge. Mass of adenoid tissue was removed from the nasopharynx. Temperature was normal; pulse, 70 to 90; respiration, 20 to 28.

In order to determine the nature of the tumor, the transsphenoidal operation was decided upon. The patient was given intratracheal anesthesia, and placed in a semi-Rose position; the posterior nares were occluded with gauze sponges, and adrenalin applications were made to the nostrils by means of cotton pledgets. The upper lip was held up, and Loewe's transverse incision was made across the labial frenum about 2 centimeters in length. This, as described by Cushing, was carried down to the anterior nasal spine of the superior maxilla, and then, by a blunt dissection, the soft parts were scraped back on each side until the cartilaginous septum was exposed. The mucous membrane of both sides of the bony and cartilaginous septum was separated, as in the Killian method of submucous resection of the nasal septum. An elongated smooth retractor was then introduced on each side, between the freed mucous membrane and the median cartilaginous bony septum. The anterior maxillary spine and the entire bony and cartilaginous septum were removed until a soft mass could be seen and felt with the probe. The base of the sphenoid bone was not demonstrable. A long trocar and cannula was then introduced into the tumor to determine if the mass was cystic. No fluid was seen. A portion of the mass was removed by means of a suitable biting forceps for histological study. In order properly to orientate ourselves a peace of lead wire, attached to a silk cord (as suggested by Dr. Chevalier Jackson, whose valuable assistance and suggestions it was my pleasure to have), was introduced at a point which was thought to be in the region of the sella turcica.

The patient reacted well; the packing was changed on the following day. The next day the packing was removed, and the patient returned to the ward, when he suddenly became very cyanotic and died in a few minutes. A postmortem examination was refused. The sudden death, which occurred so soon after the packing was removed, while not fully understood, was thought to have been due to the sudden change in intracranial pressure, and not to embolus.

The histological report was endothelioma.

261 South Seventeenth Street.

DISCUSSION

Dr. Chevalier Jackson, Philadelphia: It is extremely peculiar, the coincidence in this case of Dr. Lewis and the case of Dr. Cushing, about trauma with a subsequent development of malignancy. It was not, as we often see, a coincidence of a patient attributing everything to the fall; there were objective symptoms at the time of the original accident. What the connection is I do not know.

Dr. Lewis speaks very courteously about having had the advantage of my association in the case; this consisted chiefly in looking wise. I have never done the operation; but the ease with which an expert septum operator like Dr. Lewis can reach the pituitary region astonished me. It is remarkable what a large view can be obtained; what room there is in which to work and how quickly it is possible to get back to the sphenoid and if necessary go right through the sphenoid. The transsphenoidal route seems to me to

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* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 27, 1917.

be the one for a septal operator; it may not be the route of choice for the man who has not done a great many submucous septal operations. Each operator should select the route to suit his personal equation.

Dr. C. H. Frazier, Philadelphia: I came in to learn rather than to add to the discussion. Speaking of the etiologic factors of pituitary disorder, I have never attached much importance to trauma as an important factor. I do believe, however, that infection will be found to play a very much more important part in pituitary disorders than we have believed in the past. The pituitary body and the thyroid gland are analogous in a great many respects. We know they are analagous in their pathologic manifestations, and I believe we will find an analogy in the etiology of their various disorders.

For example, I recall the case of a young gentleman who for a little over a year had a pituitary disorder, but it was very readily controlled apparently by pituitary feeding, to the point that his visual disturbance remained stationary for over a year. The patient developed pneumonia and within two months he had a very rapid deterioration of vision, so that, when he again reported for examination, he had already lost the vision of one eye and the vision of the other was rapidly deteriorating.

May I say a word or two as to the selection of operation? One should not speak of the transsphenoidal operation as the best, or of the transfrontal as the best operation. One operation is indicated in one group of cases, and the other in another. There are two types of cases, those in which the lesion as shown by the radiogram is distinctly endocellular, primarily endocellular at the time of observation; cases in which the sella has not encroached to a very great extent on the sphenoidal sinus, so that when the floor of the sella is removed for decompression purposes the growth can expand into the space of the sphenoidal sinus.

In the second group the lesion is primarily extracellular and the deformation of the sella turcica is quite characteristic; that is, a shallow, saucer-shaped deformation instead of the deep, cup-like deformation as in primary endocellular conditions. In the primary extracellular lesion the transfrontal approach should be given preference, because from the endonasal route one can get no conception of the extent or of the size or of the nature of the growth. It is usually intracranial growth, a tumor which happens to be in the neighborhood of the pituitary body, and by pressure on the pituitary body causes pituitary symptoms.

There is another indication for the transfrontal operation in certain cases where the lesion is primarily endocellular, and the case which Dr. Lewis has just reported is an example. When you have a lesion which has so encroached on the sphenoidal sinus as to obliterate it, sellar decompression by transsphenoidal route obviously can have but little and only transitory benefit.

Those are the two groups of cases, and what I believe to be the indications for two radically different operations.

I would like to refer to one point in the technic which my friend Dr. Landon is able to discuss perhaps very much better than I, and that is the method of illumination. I cannot work with the headlight in endonasal operations, nor in any other intracranial operation. In operations on the Gasserian ganglion and in endonasal approach to the sella turcica I prefer direct illumination. All my instruments, including retractors and specula, are provided with incandescent lamps, so that the operation is splendidly illuminated and very much less trying to the eye.

Dr. Lyndon Holt Landon, Pittsburgh: I think that the point which Dr. Frazier made, of the choice of operation, cannot be too strongly emphasized. I had the opportunity, while I was associated with Dr. Frazier and since I have been in Pittsburgh, to operate on twenty-six or twenty-seven of these cases by the transsphenoidal route, and I have assisted Dr. Frazier in several of the transfrontal cases. I feel that if the growth is intrasellar and if there is still a chance, mechanically, for decompression, i. e., if the sella floor has not yet been destroyed or spontaneous decompression taken place, as a temporary palliation measure, the transsphenoidal route should be carried out to save or tide over the danger point as far as vision is concerned, even in those cases where the transfrontal operation may be ultimately indicated.

As far as the technic of the operation goes, that is not very difficult after one becomes familiar with the anatomical relations of the route, but it is somewhat more elaborate and precise than necessary during the ordinary procedures as carried out by the rhinologist.

The danger and incidence of infection is slight in the average endonasal operation, even in the pressure of infection, rhinitis or sinusitis. When, however, we contemplate entering the cranial cavity and quite likely the subdural space by this same route, asepsis is of the greatest importance if we are to escape the dangers of postoperative meningitis. So these patients have never been operated on when there was the least suspicion of any endonasal inflammation, chronic or acute, until it could be controlled or cured. We have always kept these patients under observation for a week at least, before operation and during this time have attempted to prepare as far as possible, the nasal passages and mucous membrane by antiseptic douches and sprays.

I believe that if the rhinologist would utilize the instruments which we have used for illumination, he would find the exposure very much easier, not in performing the septal resection but after the sphenoidal cavity is opened. The rostrum of the vomer is the guide to the sphenoid. When the rostrum is cleared away, in the majority of instances, the sphenoidal cells will be opened. A modified bivalve speculum having strong steel blades, the left blade of which carries a small incandescent light at the tip, is now introduced between the two layers of mucoperichondrium. By spreading the blades, the nasal cavity is dilated to its fullest extent. The turbinates are not crushed but flattened out and the remainder of the operation is carried out through the speculum and under direct illumination. The light is right at the point of entrance to the sphenoid, the cavity of which is illuminated, showing the sella floor and the intrasellar tissues after removal of this floor. Reflected light as ordinarily used gives an entirely different color and appearance to the sella contents and makes proper localization much more difficult.

After my first four or five cases, I never, except very occasionally, found it necessary to divide the operation into two stages to permit of roentgen-ray localization. After one is accustomed to the anatomic relations and the general direction, a sense of orientation is developed which comes only by practice. In a few cases I have introduced a grooved director against what I thought was the sella floor and then had a roentgenograph made, finishing the operation by its guidance, within a few hours.

All of these cases, with one or two exceptions, were done under local anesthesia. I feel that this is much safer than general anesthesia inasmuch as there is less likelihood of the patient blowing mucus and blood into the field of operation, possibly infecting the field of approach. Proper cocain anesthesia will persist from an hour to an hour and a half, which is, under ordinary circumstances, ample time for completion of the operation.

The after-care is largely inactivity. The nasal cavities are packed so as to approximate the two layers of mucoperichondrium. Bismuth-albolene gauze is used for this purpose. I feel that it is perhaps an added safety to place a small rubber tube along the floor of the inferior fossa of the nose, through which the patient can breathe; if perforated, this tube will also permit a certain amount of drainage and prevent backing up of the secretions. The packing is always removed in 24 hours and seldom is there any necessity for replacing it. Cleansing the nasal cavities with douche or spray should be done with great gentleness and care if one would avoid forcing infective material into the wound.

As to the results obtained, we must not be very optimistic, I fear. There is practically always at least a temporary improvement in vision. In many cases this is startling and persists. I recall one patient of Dr. Frazier's which is a very good example of permanent relief from this operation; a school teacher from the west on whom we operated three years ago. Dr. Frazier tells me that he heard from her a short time ago, that her visual improvement has persisted, she has been able to resume her occupation; there has been no recurrence of the growth.

A short time ago I operated on a patient of Dr. Stieren's. Dr. Stieren tells me this patient is considerably improved. In this case there was a very large tumor, a sarcoma, largely intrasellar, for which I felt the operation was but a palliative measure.

Eventually the transsphenoidal route should fall into the hands of the rhinologist and that is the field in which it really lies, but with the rhinologist should be associated one who is familiar with the various types of growths and the indications for and against the two routes of approach.

Dr. Jackson: I would like just to put myself straight and have it distinctly understood that I know absolutely nothing about these operations. I meant only that, if it were decided that the transsphenoidal route is to be adopted, I should like to offer the evidence of this particular case as to the large field obtained, because I myself was surprised.

There is one very interesting point Dr. Landon and Dr. Frazier mentioned about illumination by a small lamp close to the field. All the first bronchoscopes were made so that the light was projected down from above, and the image of the field came straight back to you from the same direction in which it was projected. Now all eye men present know that if they want to see things on the cornea they use oblique illumination. Dr. Ellen J. Patterson and I have found in bronchoscopy and esophagoscopy that we can see things in that way that others cannot see by a light projected down from above. The small light at the point gives an oblique field. It is simply wonderful what a difference there is and I presume the same principle of the advantage of more or less oblique illumination would apply to the instruments so ingeniously devised by Dr. Frazier and Dr. Landon.

Dr. Lewis, closing: I would like to say that in this particular case the object was, if possible, to make a diagnosis as to the character of the growth. We felt that if it were cystic, the transsphenoidal route might effect a cure. If it proved to be malignant, we thought it was inoperable. I might say, too, in regard to one point brought out by Dr. Landon, that I think it extremely necessary in the transsphenoidal route to see that the mucous membrane is not injured, because if it is it of course readily admits any infection from the nose.

NONOPERATIVE TREATMENT OF NASAL SINUSITIS *

EUGENE L. VANSANT, M.D.
PHILADELPHIA

A more conservative treatment of nasal sinus suppuration is, judging from recent literature, now claiming the attention of some of our best rhinologists. This is due not only to the occasional disappointing results following radical operations but also to the great advance in nonsurgical methods.

Certainly, the facial disfigurement, the recurrence of suppuration, the long, tedious recoveries, and the injury to important physiological structures in the nose, associated at times with radical operations, should incline us to restrict such operations to cases that cannot be otherwise relieved. We should be careful, however, not to become ultraconservative, for it is undoubtedly true that there are many cases where operative procedures are imperatively demanded.

With this in mind, let us then consider some of our present methods of treating suppurations in the nasal accessory sinuses from a nonsurgical point of view. A thorough, careful examination and an accurate diagnosis are of the first importance, and, without dwelling upon the usual well known methods used to make such an examination, I desire particularly to call your attention to the important aid derived from the stereoscopic examination of skiagrams of the sinuses. The technic of taking these skiagrams has been greatly improved; they are much clearer and better than even a few years ago. When we carefully study them with the stereoscope, we are usually able to diagnose the condition of even the most deeply seated sinus.

An accurate diagnosis may frequently prevent us from performing a radical operation. A considerable percentage (estimated at about

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* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

1/3) of all cases of sinus suppuration follows infection from the root of a decayed tooth extending into the sinus, in which case removal of the tooth and appropriate treatment is indicated.

Sinusitis caused by syphilis or associated with the exanthemata or influenza demands that the general condition be treated, and the local condition handled conservatively. Sinusitis caused by exposure to the mineral poisons, phosphorus, etc., should first be cared for by removing the offending cause.

We must always remember that any successful treatment of a nasal sinus suppuration must be based on well known medical and surgical principles, and these are: (1) Drainage and ventilation must be established; (2) pus must be evacuated; (3) the underlying causes must be removed; (4) secondary and associated conditions must be relieved.

1. Interference with the drainage and ventilation of the sinuses is often caused by intranasal conditions, among which may be mentioned deflection of the nasal septum, enlarged turbinals, nasal polyps, and turgescence of the nasal mucosa, these requiring appropriate general and intranasal treatment. The inflammatory turgescent condition of the turbinals and nasal mucosa which is usually associated with sinus suppuration demands special attention, for this swollen condition interferes with the drainage from the sinuses. A method that I have found to be of great aid to relieve this condition is the use of absorbent cotton plugs saturated with solutions of the nonirritative silver products. After a weak cocainization of the nose, large plugs of absorbent cotton saturated with a 10 per cent. solution of argyrol in glycerin are placed between the swollen turbinals and the outlets of the sinuses. When left in place for 10 to 15 minutes, these plugs excite a copious mucous discharge from the nose without irritation, thus reducing the congestion of the tissues and improving the drainage from the sinuses. Another method that is of great value is the forcible injection of thin streams of heated air across or against the sinus outlets. This has a very penetrating power and can force its way into small interstices, thus frequently opening the obstructed outlets of the cells and sinuses, improving their ventilation and drainage. For this treatment I use the small hot-air apparatus devised by myself some years ago.[1] Again, the application of radiant light and heat by a high power lamp (500 c. p. hooded incandescent bulb) directed for an hour over the frontal area, the eyes being shielded by moist cotton pads, may so relieve the congestion that drainage from the sinuses will be improved.

2. In evacuation of pus from the sinuses, a great advance has been made by the use of suction apparatus. Many operators find the results obtained by this method frequently enable them to avoid severe operative procedures. An apparatus devised by L. A. Coffin,[2] whereby alternate suction and compression may be used, is of considerable value. With this instrument secretion may be removed by suction from the nasal chambers and more or less from the nasal sinuses, then by means of a switch key the suction or negative pressure may be turned into positive pressure. It is supposed that the suction has caused a partial vacuum and the inrushing positive pressure may therefore carry air and medication into the sinuses. In this treatment Coffin[2] uses an "oil loaded with Bulgarian bacilli or one of the proprietary preparations of iodin," Wells[3] used "for the most part two formulæ: in the recent cases a preparation containing salol, 1 per cent.; camphor-menthol, 2 per cent., in benzoinol, and in the older cases a preparation of iodin." Personally, in the recent cases I would not recommend the use of this compression, or positive pressure, either with or without medicaments. In the chronic cases I am inclined to favor the use of nascent iodin, after removal of the secretions by suction. This, although rather severe in some cases, may be best used through cannulas. Syringing of the sinuses with fluids either through the normal or accessory ostia, or through an artificial opening is of great aid in removing secretions from the sinuses, and this procedure may be followed by injections of medicaments having a beneficial effect on the mucosa.

3. In regard to the underlying causes of nasal suppuration, we must remember that the affection is at least a local septic process. Here we find, in some cases, great aid by the use of appropriate vaccines; personally, I prefer the use of an autogenous vaccine, but the bacterial flora of the nose is quite varied, and it is a question whether a stock vaccine of the different pyogenic cocci, with the pneumococci[4] is not preferable to endeavoring to procure an autogenous vaccine. At times I have used the stock vaccines of the above mentioned cocci

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[1] Vansant, E. L.: Jour. Am. Med. Assn., Oct. 2, 1897; Philadelphia Med. Jour., May 7, 1898, and Sept. 9, 1899; Am. Med., new Series, Vol. 1, November, 1906.

[2] Coffin, L. A.: The Laryngoscope, December, 1915.

[3] Wells, Walther A.: The Laryngoscope, May, 1917.

[4] Lewis and Turner: Edinburgh Med. Jour., Vol. 18, 1905.

with influenza bacilli. The use of these vaccines seems to thin the discharge and, if associated with proper local and general measures, apparently is of great aid in removing the suppurative process.

4. The treatment of the associated and secondary conditions of nasal sinus suppuration is certainly a most important part of a conservative treatment. More or less general anemia is usually present. Extension of the local infection to the chest, causing bronchial conditions, more or less chronic, is frequent. Digestive disturbances, affections of the eyes and vision and pain in the head are quite common. We are also becoming more and more aware that kidney complications, obscure nervous conditions, and affections of parts far removed from the local focus of infection in the sinuses are frequently present. These general conditions demand the intelligent cooperation of the general practitioner with the specialist, and their successful treatment is no small part of the case.

In conclusion, if I should be asked to outline the steps of a conservative treatment that, in my opinion, would promise the greatest success, it would be as follows: After a very careful examination and diagnosis and, if possible, removal of intranasal obstructions, the nasal chambers should be cocainized, the previously described nasal plugs saturated with argyrol and glycerin inserted and allowed to remain in place until active discharge ceases; this should be followed by the use of the suction apparatus. After this, an effort should be made to force medicated fluids or vapors into the sinuses either with the Coffin apparatus or the hot-air syringe. All this treatment is carried out in the office. For home treatment the patient should use a cleansing wash, and the general practitioner should institute whatever general treatment is necessary. If the above treatment does not obtain a favorable result in a short time, vaccine hypodermic injections should be added to the local treatment. These injections are usually given in the office and should be repeated every three or five days, according to the case.

Finally, no one wishes to claim absolute cures from any treatment, either surgical or nonsurgical. We should always remember that a tissue, once damaged, is generally more liable to future trouble than before the damage; also, that the thorough eradication of a local sepsis, situated in deep cavities, is a very difficult matter, but the above mentioned treatment has placed many patients under my care in a condition entirely satisfactory to themselves, with total absence of pus discharge, and they have continued to remain in the improved condition.

1929 Chestnut Street.

DISCUSSION

Dr. Lewis H. Taylor, Wilkes-Barre: It seems to me that the title of Dr. Vansant's paper should have been "The Nonexternal Operative Treatment," for it is almost impossible to treat a nasal sinusitis without some operative procedure, and Dr. Vansant has recommended to us in his excellent paper very judicious and thorough intranasal operative treatment, and this intranasal operative treatment is, of course, a very important part of the procedure. No doubt external operative treatment was much more in vogue a few years ago than now, and many a patient is bearing an ugly scar, amounting sometimes to a deformity, which might have been avoided by timely and energetic nasal treatment.

If there were no nasal obstruction there would probably be no sinusitis, for even the decayed teeth, pyorrhea, the much maligned tonsil and other agencies would have very little chance to get in their nefarious work if the patient had unobstructed drainage into the nasal chambers. Hence the very great importance of removing these obstructions.

Dr. Vansant did not speak of the galvanocautery, but I believe its proper application to enlarged turbinates is often of great value in causing shrinkage of the turbinates and allowing free drainage. In regard to the hot-air treatment recommended some years ago by Dr. Vansant and again in his paper today, I will say that it is like many other procedures, all right in the hands of a master but not entirely without danger. I was called hastily a few years ago to the office of a colleague who was using extensively the hot-air treatment and found the patient stretched on the floor in an unconscious condition. The doctor had just used the hot-air treatment for headache caused by sinus trouble; the patient suddenly collapsed, was unconscious, and remained in a critical condition for several days. This does not necessarily condemn the method; it is merely cited to show that it is not devoid of apparent danger.

I heartily endorse the use of the suction apparatus and have had considerable satisfaction in its use, but I do not use the immediate counter compression and I understand this is Dr. Vansant's idea. The application of remedies after thorough cleansing of the nasal cavities and evacuation of pus can be readily accomplished.

Dr. Vansant has so thoroughly covered the ground in his admirable paper that I am sure we can all heartily endorse his conclusions.

Dr. Henry M. Hall, Pittsburgh: I am hardly qualified to discuss such an excellent paper, but it is a very important subject, and I made a point of attending the section this afternoon for that reason. I chanced to meet a physician in New York state this summer, who stated that his son had suffered from an ethmoidal sinusitis for the past year, which put him out of his studies at Ann Arbor, and of course there had been no operative procedure taken as yet. I wish to mention that I was a sufferer from a frontal infection a number of years ago, and I cured it myself with pressure and position, by lowering the head. The doctor had mentioned the drainage by change in position, which I found effective.

Dr. G. R. S. Corson, Pottsville: I believe we do not lay sufficient stress on the point of general antiphlogistic measures. I think that is important, just as Dr. Vansant and Dr. Taylor have both mentioned, but I like to emphasize that we are so inclined to stick to our specialties that we forget the general antiphlogistic measures in these cases. I believe that I have saved operative treatment in a considerable number of cases by the application of cocain and adrenalin to get temporary drainage. You will say that we get a reaction from the application of adrenalin. That may be, but before that reaction has taken place we have accomplished what we deemed necessary, drainage. External applications of extreme heat or cold will help. I am extremely loath to remove turbinal bones or to do radical operations for sinusitis until I have exhausted every other means to reduce the inflammation or drain the cavities, as the case may be.

Dr. John B. McMurray, Washington: Dr. Vansant spoke about cleansing the nasal cavities, not only for treatment but in putting some means in the hands of the patient whereby he could continue those cleansing methods at home. For myself, I am very much at a loss to know what is the best method to instruct the patient to use in keeping the nose clean in the intervals of treatment. I would like to have Dr. Vansant, in closing the discussion of his paper, explain to us his method of instructing the patients for the home cleansing of the nose, which I think is certainly very important.

Dr. J. C. McAllister, Ridgway: I have been rather averse to Dr. Corson's method of treatment by applying cocain and adrenalin. It is so temporary in its effect, and, being followed by reaction, I have questioned its advisability where there is a pus discharge. In case of pain where there is pressure I would use it. With the thickened mucous membrane and more or less partial occlusion of the ducts, we should try to get a more permanent result than cocain or adrenalin will give us.

What will that method be? The best thing that I know of is chromic acid, cauterizing the middle turbinate at the extremity with a bead of the acid. Dr. Taylor spoke about the actual cautery. Chromic acid in my hands has given me a more permanent contraction of the soft tissues than has the actual cautery. I will be glad if some one here knows something better than chromic acid with which to cauterize the middle turbinate. At present I have a case of acute suppuration of the right frontal sinus. The patient is now comparatively free from pain. I am rather averse to removing the anterior extremity of the middle turbinate, although there is some pressure and possibly I should do it. If some one here can tell me how long I should wait before removing the anterior extremity, I will be glad for the information. He has had this now perhaps a month. I do not like to allow the suppuration to continue for fear it may become permanently chronic.

Dr. Nelson S. Weinberger, Sayre: I think that the recent remarks made on the question of shrinkage were meant more to apply to acute conditions, and in that line I wish simply to emphasize what Dr. Corson has said. I think it is far better to get drainage and to get it just as early as we can than to cauterize and get that reaction following the cautery. We get a reaction following the application of cocain and adrenalin, it is very true, but we must repeat our applications of cocain and adrenalin sufficiently often to keep the turbinate fairly well shrunk and maintain our drainage. If we obtain drainage we give the patient almost instant relief, and therefore hasten convalescence. After we have applied cocain and adrenalin maybe three times for the first day, if necessary (maybe only twice), the second day twice or once, third day maybe once, the fourth day maybe once, we will find that the turbinate remains shrunk and that drainage is continuous; the patient, of course, rapidly gets well. I do not believe in any operative procedure in an acute sinus infection unless it is absolutely necessary to get drainage.

Dr. C. J. Kistler, Lehighton: I think perhaps this seeming difference of opinion is not so much a real difference of opinion as it is that we are confusing the stage of the trouble in which we apply the different treatments. I think all of us who have had considerable experience with sinus work will agree that in the early stage of any acute sinusitis, we would not think of applying a cautery, chromic acid, electric or anything we may call a cautery. I have the honor to have been one of the pupils of Dr. Vansant and have been a follower of his treatments in a great many things. I consider a patient with an acute frontal sinusitis, so often due to influenza, a sick patient. If it can possibly be done, that patient should be sent to bed for a day or two, emptying his gastro-intestinal system and treating him as you would a patient with any acute infectious condition. Many times there will be very little local interference necessary. However, we do not always see the patients in that stage. They come to us more often in the subacute and even advanced subacute stage. Then I should say that the local and more specific treatment will be required. I wish to ask Dr. Taylor if he inquired whether that doctor had applied cocain and adrenalin to the tissues before that patient collapsed, or whether he had done nothing but the hot-air application.

Dr. Taylor: That I cannot answer. It was a number of years ago and I do not recall the circumstances. I imagine he had.

Dr. Kistler: I would dislike very much to have that attributed to Dr. Vansant's hot-air treatment, because I have used it a great many times and have had nothing but good from it; that is, in acute cases. I am not in favor of cauterizing the middle turbinate, because I have always been afraid of cauterizing this bone. The middle turbinate is a part of the ethmoid labyrinth, the anterior end often being an open cell. In doing either electrical or chemical cautery we are very apt to start inflammation of the whole ethmoid labyrinth and produce more trouble than we do good.

Now again as to obstructions to breathing being the cause of sinus trouble; Dr. Vansant did not specify the stage of the sinusitis, which would probably include every stage of this trouble. I am sure he made himself clear when he talked about surgical interference being necessary and sometimes being the most conservative treatment. Cauterizing the turbinate or using cocain and adrenalin in the more chronic conditions is not conservative treatment. I would call that poor treatment.

To illustrate, I want to recite an experience I had not more than a month ago, and which will bring out several points: A young school teacher came to the office, the most woebegone picture of misery that I had seen for a long time, so deaf with two running ears that she could not hear me talk to her on the treatment chair. As a matter of routine in a rather busy afternoon I examined her nose. She had absolutely no history of previous nose trouble, no discharge, no congestion; both nostrils were perfectly patulous; no odor. I noticed a speck of dried discharge in the area below the opening into the right antrum of Highmore. That was all, but that was enough to create a suspicion in my mind. I transilluminated for what it was worth and found that side practically dark. I immediately washed out the antrum. I do not consider that an operation. I do not know whether Dr. Taylor does or not.

Dr. Taylor: It is if you puncture the antrum through the inferior meatus.

Dr. Kistler: Well, we will call it an operation, but it is usually very easily done. And out of that perfectly normal nostril except for a little dried pus, I washed a tablespoonful and a half of the most fetid pus you could possibly smell. In fifteen minutes that girl could hear me talk across the width of the room, about 20 feet, in an ordinary tone of voice.

After the second washing of the antrum both ears stopped running; the drums healed up perfectly; her hearing is normal and the antrum after the fourth washing is clean.

Now, there was a case where there was no history of acute nose trouble whatever; no nasal obstruction of any kind; in fact, nothing to attract attention to the nose. It had probably gone on two months or more since, she remembered, she had had an ordinary cold. It shows the necessity of looking for these conditions routinely and that nasal obstructions are not necessary or always present; even in those advanced subacute conditions, even bordering on the chronic, a conservative course or the small operation of washing out will often relieve the case and should be tried first. I think when talking of this treatment we should not get confused as to what stage of the trouble we are talking about, because the treatment differs with local conditions as well as the stage in which we find the trouble.

Dr. W. E. Dodson, Indiana: It is very evident that cases are not all alike, and diagnosis and treatment are never exactly the same. We may go over a great number of cases, and the treatment must vary according to our finding. When I first commenced to treat nasal sinus inflammation I thought the treatment generally taught and practiced was rather too irritating and followed immediately by too violent reaction, although very successful if kept up. Mild cleansing alkaline solutions were used and places needing cauterizing were touched up. I remember a particular patient that had taken fifty treatments with no benefit. That case was not a mild, acute turgescence, but a case of much obstruction. The removing of parts of the turbinate gave better drainage, and in four to five weeks the case was cured by the use of mild treatment. The case illustrates how just sufficient drainage and air circulation does away with headaches and wrong feeling in the head.

At the present day people are educated more on these lines, and school children are inspected; therefore I think we do not have as many neglected cases as twenty or thirty years ago. We do not have them because people are educated to the fact that their noses and throats must be clear, and that they must not breathe through their mouths all the time. These turgescences can be excused in small children often for a time, but after they become of a certain age and the parents know of it, it is the parents' duty to have the condition treated, and they do. Therefore they are treated sooner than formerly. What is the reason we do not have or find obstructions and suppurations extending so often to the frontal, ethmoid, sphenoid, maxillary sinuses, and to the ear? We find enough of it yet.

I was interested when Dr. Vansant said in his paper that radical operations are performed less frequently, as I think it saves, often, deformities which cannot be gotten rid of later. The acute and partly chronic turgescence so often found I treat with a mild alkaline solution, increased in strength often and followed by some appropriate astringent or alterative application, then extending the treatment well up the sinuses with a nebulizing mixture, and protecting the sensitive membrane with an oil solution sprayed in the nostrils. Writers on the subject have spoken of the compression of the turbinates. I never used that way or form, as an instrument that would compress would bruise. The only way I go about to compress the turbinates is by the use of drugs that constrict, blanch and dehydrate the spongy soft tissues.

A great and important thing to do in the way of preventing seated trouble in the extending sinuses and ears, and in preventing these stoppages is frequent and early treatment of the disease or conditions there.

I think very favorably of the doctor's remarks in his paper of the need of continued treatment of nasal sinus turgescence. The trouble is patients live often quite a distance away and do not as a rule apply for treatment more often than two or three days' intervals or two or three times a week. Therefore it is desirable after appropriate treatment to use some medication that will continue the constricting effect, and between treatments the simplest form of treatment at home and by themselves. I use compression and think it a good adjunct to treatment, to be used after clearing the nasal sinuses and parts first well constricted. Medication can be thereby gotten well up the sinuses. A solution of menthol in albolene lightly creosotized is a good formula for compression used with nebulizer. Iodin may be added in some cases with benefit.

I do not as a rule favor suction method of treatment; at least, I have not followed that method, but I can see where it would be of benefit if followed very carefully in indicated cases.

Dr. Vansant, closing: I feel very much complimented by the wide and interesting discussion that this brief paper has elicited.

In regard to the title of the paper, of course I thought it was understood that I meant nonoperative treatment on the sinuses themselves.

I do not think much weight should be placed on the case cited by Dr. Taylor. I have used the hot-air treatment for many years and very extensively, and I never have had any such complication; furthermore, we all know how conditions of surgical shock may sometimes follow the slightest thing we do for a patient, especially if associated with the administration of cocain. I remember some years ago with a very eminent colleague in Philadelphia being called in and finding a man suffering from the same condition of surgical shock following nasal cauterization. In fact, it was some three days before that man could resume his activities at all. Surgical shock may come, as we all know, from very slight injuries.

Now there are a great many things that I could have said in this paper that I did not say, not wishing to go over old ground. I tried to confine myself more to things that are at least slightly novel. The discussion has brought out some of the things I might have said. There are a good many others. I would like to draw your attention, for instance, to the effect of climate on a chronic case of sinusitis; removal of the patient from the dusty city and his daily pursuits (especially if you have established drainage into the nose) to the seashore, or in the winter time to the southern climate, will very frequently clear up the sinusitis.

Dr. McAllister asked me in regard to the cleansing at home after the office treatment. That is a very essential part of the treatment. It is my custom to put into the hands of the patient a solution containing a small amount of cocain, about one half of 1 per cent., with 3 per cent. of argyrol, and equal portions of water and liquor antisepticus alkolinus (N. F.). This solution will thoroughly cleanse the nose and is quite an item in the treatment.

A normal salt solution is also a good cleansing fluid; but irritating or stimulating washes should not be used in these cases.

In regard to the use of galvanocautery in acute sinusitis, I would not recommend its use on the turbinals while the condition remains acute. Such cases must be treated as any acute condition would be.

The use, as suggested by Dr. Corson, of a small amount of cocain and adrenalin in acute cases is a well-known treatment which I have frequently carried out. In an acute case the patient should have some means at home for clearing and cleansing the nose, and cocain and adrenalin will usually clear the nose and if followed by the use of a warm normal salt solution a fair cleansing may be obtained. Rest in bed, cold applications, or sometimes hot applications over the face, purgation and the administration of some of the coal tar products, notably aspirin, will give a great deal of relief in acute cases and usually in a short time, but these are not the cases that usually come to us. Nearly all the patients that come to me have been suffering for quite a while. They are mostly all chronic and semichronic cases.

Dr. McAllister: The question I asked was this: How long after the commencement of suppuration would you do any operative surgery, as removing an hypertrophied turbinate? How soon do you think it would be safe?

Dr. Vansant: Do I understand the doctor's question to be how soon would I remove an enlarged turbinal after an acute sinus suppuration.

Dr. McAllister: Yes.

Dr. Vansant: That, of course, is a question that would depend entirely on the individual case before me. Generally speaking, I would not touch the turbinate at all from an operative point of view. If it is absolutely necessary in order to establish drainage from the sinus, of course I would, and very frequently I have removed the turbinate entirely, or occasionally used the galvanocautery. I am not partial, as you see, to the cautery in such cases, but unless it was for the distinct purpose of establishing drainage I could not otherwise obtain, I would not interfere with the turbinate.

Dr. McAllister: In this case I have in mind there is a deviated septum, great pus discharge, a good deal of pus forming, and the turbinate is packed in tightly. I cannot pass even the smallest probe and it is packed in there so tightly it looks to me as though I would have to remove it. Now, how soon after this commences to suppurate would it be safe to remove that crowded turbinate in order to establish drainage? Of course, now I have some drainage, understand, but at the same time the right frontal sinus is absolutely dark, indicating that it is packed full of pus, and I want to get better drainage.

Dr. Vansant: To give an intelligent opinion in answer to the doctor's question in regard to his particular patient, I would like very much to have the opportunity of examining the patient. But speaking generally on a case of that sort, I would treat it with the quieting methods that I have spoken of until I got the acute conditions subsided. Then if the sinusitis did not clear up and it was due to nasal obstructions, I would remove the nasal obstruction.

Now, as to how long it would be before I would proceed to remove the nasal obstruction, this would vary extremely. If I had a case from a long distance, I would not waste much time. The patient would probably have little time before his return home. In such an instance I would operate as soon as I got the acute condition subsided, or if it were absolutely necessary, I would not defer, even if the acute conditions were not completely subsided.

Dr. Leslie R. Hazlett, Butler: I would like to ask Dr. Vansant if there is any objection to the use of oil, menthol, oil of pine needles, etc.; if there is any objection at all to the use of those as a routine treatment at home for our patients? I think that has not been mentioned in the suggestions for treatment, has not even been mentioned by any of the speakers, and I would like to know whether there is any objection to the use of such an agent for home treatment.

Dr. George W. Stimson, Pittsburgh: I want to ask of Dr. Vansant if he occasionally runs across patients that complain of acute frontal sinus pains, severe pains; where there is shrinkage of the middle turbinate and aeration of the frontal sinus will give relief; where there never has been any discharge, and observation for several days afterwards will show none; where the possibility entered one's mind that it might be negative pressure in the frontal sinus (the same as one might get in the middle ear) and relieve that negative pressure by shrinking the middle turbinate and relieve the patient?

Dr. Vansant: The use of oils of various sorts (at least, I have always understood) was the use of medicine that would give a slight protection to the mucous membrane more than anything else. I think there is no particular objection to the use of oils, although possibly the prolonged use of oils may produce a subsequent dryness of the mucous membrane. Otherwise I do not know of any particular objection to the use of oil.

In regard to that type of cases of which Dr. Stimson speaks, they are very interesting. We do have a class of cases, very often associated with nervous disorders, in which the main element is pain, or recurrent pain associated with the sinus, and there may be little or no discharge, or possibly a little catarrhal condition, and here the ventilation of the sinuses is of highest importance. Now, if it is necessary to remove part of the turbinate to secure that ventilation, that is eminently proper. Such ventilation can oftentimes be procured by relieving the turgescence of the mucosa. They are interesting cases and not infrequently intelligent treatment of the general condition will be of the greatest aid. I have seen the internal administration of iron act very beautifully in some of these cases. Prolonged vacations or change of air may bring good results, but they are certainly a class of cases, as the doctor has said, that do command our special attention.

INDICATIONS FOR OPERATION IN GLAUCOMA *

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Perhaps an apology is due the section for my choice of a subject. We are all supposed to be familiar with glaucoma in all its phases, and it would surely appear as though by this time, so many years after the recognition of the disease and after so much dicussion of its treatment, that there would be universal agreement as to when to operate and when not; as to the best methods of procedure to be employed in combating the various types of the disease; in fine, one would suppose that by this time the profession would be a unit in all things relating to glaucoma. Yet I think you will agree with me that there never was a time when the profession was more divided than at present in its consideration of the treatment of glaucoma. The multiplicity of operations which have been introduced for the cure of the disease during the past decade has influenced the practice of ophthalmologists the world over and perhaps unbalanced their judgment. The introducers and advocates of the various newer methods all claim an excellence for their procedures which is not yielded them by the partisans of other operative measures, and there is still a large number of conservatives, representing perhaps the majority of the profession, who still adhere to iridectomy and follow in the footsteps of the master, von Graefe.

Before proceeding with the phase of the subject with which my paper deals, I wish to refer for a moment to what I believe to be one of the most important present-day evils in ophthalmology, the failure of many practitioners and even some ophthalmologists properly to recognize glaucoma until the disease has so far progressed that blindness or at best greatly reduced vision is inevitable. Even inflammatory glaucoma, with its striking and characteristic symptoms, is at times mistaken for iritis or something else and improperly treated by mydriatics. No less a personage than Sir Anderson Critchett, the illustrious son of an even more illustrious ophthalmologist father, complained recently of the frequency of this happening in England, and all of us probably can testify to what occasionally happens in this country. But it is in cases of chronic glaucoma chiefly that errors in diagnosis arise and the saddest fatalities are recorded, and this happens because the recognition of chronic glaucoma is not always easy, particularly if the practitioner does not avail himself of all the means at his command in establishing his diagnosis, especially of tonometry and a painstaking study of the visual fields. Digital palpation of the globe will often fail to detect the slight hardening which the more delicate reading of the tonometer would disclose, and a more careful study of the field will reveal more or less characteristic lesions in the central portions of the field which escaped a more casual perimetric test. A plea, then, for a more frequent use of the tonometer and for a more general appreciation of the changes in the central field of vision which recent observers have proved to be more or less characteristic of glaucoma. I refer primarily to the scotomata which will be found radiating from the enlarged blind spot in the center, *i. e.,* Bjerrum's sign, and the extension of the blind spot to the periphery, usually in the nasal field, giving rise to what is known as Rönne nasal step. These scotomata must be painstakingly searched for, and at frequent intervals, for in no other manner can we obtain such an accurate index of the progress of the disease.

And now for a consideration of the subject matter proper of the paper, *i. e.,* the indications for operation in glaucoma. At a meeting of the Wills Hospital Society, in November of 1915, I formulated a series of conclusions which embodied the views I held at that time regarding operating in glaucoma, and they still represent my conviction. I will venture to repeat them here. The indications for operation in glaucoma should be:

1. In all cases of acute and subacute glaucoma, and in all chronic cases, on the manifestation of any inflammatory glaucomatous symptoms.

2. In all cases of chronic glaucoma in which there is doubt of the patient's cooperation in the persistence in the miotic treatment throughout the remainder of life. This includes practically all hospital cases and such private patients as may be of a weak and vacillating disposition.

3. In all patients with chronic glaucoma who reside at such a distance from centers where proper ophthalmic care may be obtained that they are unable to report at sufficiently frequent intervals for the supervision necessary for the proper and safe carrying out of the miotic treatment, or for operation in the event that inflammatory symptoms arise.

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* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

4. In chronic cases where the patients are under 55 years of age, when the field of vision and central vision are good, an operation on the most affected eye is advised, miotics being employed in both the operated and the unoperated eye for the remainder of life. Operation on the second eye should follow, if subsequent observation shows that vision is maintained better in the operated than in the unoperated eye.

5. In all cases of chronic glaucoma, without regard to age or the development of the disease, in which miotics have been given a faithful trial for at least six weeks or two months, as evidenced by the constant maintenance of pupillary contraction to almost pin-point size, and in which vision and the field of vision show progressive deterioration.

In all cases not included under the five headings given above, miotics should be employed with great zealousness and persistence four times a day. I have reported elsewhere the value of this plan of treatment in maintaining vision for many years in a large group of cases, and I am convinced that if glaucoma is recognized as early as we now have measures at our command to insure, and if treatment is carried out along the lines I have indicated, the gloomy prognosis for sight so often rendered in cases of chronic glaucoma is unnecessary and unwarranted.

Cyclodialysis and trephining should be performed in all cases in which operation is demanded if there be a hemorrhagic tendency or the field of vision is very much reduced. The latter is to be preferred also in certain forms of secondary glaucoma. Iridectomy is the procedure of choice in all other cases. From my own observations and from considering the experience of others, I am convinced that the trephining operation is usually a more dangerous procedure than iridectomy, on account of the opacification of the lens that follows in not a small proportion of cases either immediately or remotely after the operation, and the danger of accidental infections in the subsequent course of the case. The claims of greater efficiency of the trephining operation made by some have not been proved by statistics, based on a sufficiently large number of cases observed for a considerable number of years after the trephining operation, which might serve as a basis of comparison with statistics such as those compiled by the late C. S. Bull and others, which show conclusively the postoperative effects of iridectomy. That trephining has the power to lower tension no one can deny, but that it is the most potent known operative measure in securing and retaining sight threatened by glaucoma, time and the conservative observation and report of a large number of cases will alone prove.

DISCUSSION

Dr. J. E. Willetts, Pittsburgh: I have not recently given the subject much consideration, but in former days I studied operative measures for glaucoma, which were determined principally from the degree of tension. Contraction of the field was assumed to exist, and all other conditions were considered secondary. Since then ulcer refinement, we may say, has been brought about by scientific investigation of the subject. I think it is very opportune to bring these points out, because we, as a rule, do not consider the field other than for records and to watch the progress of disease. In fact, the field has nothing to do with the operation, as far as I can see. If there is increased tension, and we want to operate, all else is secondary to the tension. I will read the discussion furnished by Dr. Zentmayer, who was to have opened the discussion.

Dr. William Zentmayer, Philadelphia: While at first thought the subject of Dr. Posey's paper may seem trite, on consideration I believe it to be opportune. A very recent experience has convinced me that even those with some ophthalmologic training will at times overlook the essential symptom of glaucoma because the accompanying phenomena resemble other conditions. Though the refinements for the study of cases of glaucoma, as pointed out by Dr. Posey, are of the utmost importance in determining the progress of the disease, it would defeat one of the aims of Dr. Posey's paper if it be inferred that they are necessary for diagnostic purposes. It needs to be emphasized that for the diagnosis of glaucoma no special apparatus is required.

It is difficult to lay down rules for guidance as to the indications for operation in glaucoma, because the conditions to be met differ in almost every case, but I think Dr. Posey has given us a good working basis. An analysis of Dr. Posey's five indications for operating in glaucoma brings us to the conclusion that the miotic treatment is accorded a very minor part in the management of glaucoma; that it is reserved for the chronic noncongestive type occurring in private patients over 55 years of age, of strong character, residing within easy reach of a competent ophthalmic surgeon and in which the cardinal symptoms of glaucoma do not progress. My own rule does not differ greatly from this. I have before stated it in the following terms: That an operation should be done in cases of simple chronic glaucoma in all patients under 55 years of age and in hospital cases in all cases under 65 years of age in which the disease has not progressed to the stage in which operation is contraindicated or in which the condition of the retinal blood vessels would render operation unsafe.

While I have not had sufficient personal experience on which to base an opinion, I believe it is generally considered that chronic congestive glaucoma should be treated with miotics, as its progress seems to be hastened by operation.

I cannot agree with Dr. Posey in recommending trephining in glaucoma with a hemorrhagic tendency. If any operation is to be done I should advise only cyclodialysis, as this operation alone best meets the indications of securing a slow gradual reduction of intra-ocular tension. I am convinced that trephining at times gives more brilliant results than iridectomy, and I should be inclined to do it on the worse eye, when both eyes are affected, performing iridectomy on the fellow eye. No operation is free from danger, and I am pretty sure that few if any operators have a clean record of not having had cataract develop after operation.

With greater attention to the patient's general condition operations may at times be delayed, and probably when the etiology of chronic simple glaucoma is better understood operations will rarely be required.

Dr. Harvey M. Becker, Sunbury: Immediately following the discussion of Dr. Posey at the Wills Eye Hospital, two years ago, I took that set of rules home and studied it. I have made an attempt to follow that out, as having been perhaps the most concise and most to the point of any set of rules for the management of all types of glaucoma that I have ever seen. With the cases that have been under Dr. Posey's management before I had them, and those that I have seen of my own, while those plans were being followed the results, I believe, have been better than by any other rule of procedure, if there is such a thing as a rule.

As for the rise of tension determining the operative time or the method of procedure, I disagree. Dr. Posey, I think, did not say just as forcibly or as clearly as he wanted to say, that the size or the persistent contraction of the visual field, rather than the rise of tension, should be the indicator, because I believe that he and I together have had, in a case that he has operated on, one of pronounced glaucoma in both eyes, where intra-ocular tension was remarkably low, in fact, not abnormal. And yet, after an operative procedure, iridectomy by Dr. Posey, the vision in one eye has been lost. The tension has always remained down, so that the only error that I see in the management of that particular case was that the iridectomy was not done soon enough. I should not say error, because we did not see the woman until she had progressed to that point. She was operated on almost immediately after we saw her, but because she did not arrive soon enough her visual field is contracted to mere central vision, and yet the unoperated eye had no increase in tension with almost similarly contracted fields. If the operative procedure in that particular case had been based on the size or the persistent contraction of the visual field, that woman perhaps today would have two good eyes instead of one bad one. I do not believe that Dr. Posey drove that home quite as clearly as he wanted to, and perhaps will drive it better when he speaks later.

As for the trephining procedure, I have seen one untoward result: A pair of eyes, trephined by one of the most noted experts in Philadelphia in the trephining game, absolutely lost before the patient left the hospital, that had been behaving beautifully under myotic treatment. I still have that poor girl on my hands with persistent pain but refusal to have enucleation. I do not believe it has any power to control the contraction of the visual field. I have never been able to make myself believe that trephining or cyclodialysis, the Lagrange or any other operative procedure that you wish to consider than iridectomy, has any effect on visual field contraction. And what difference does it make whether we operate or not, if our patient progresses with the persistent contraction of the field of vision to blindness? The only difference I can see is that of the pay patient. I cannot see any other.

I do not believe that the touching of the lens during the operative procedure or the manipulating of the eye has anything to do with the subsequent cataract formation. I do not believe that the operative procedure, in itself, has anything to do with the formation of cataracts, except in the sudden release of pressure or tension on the lens substance itself, permitting expansion of the capsule.

Dr. F. O. Lewis, Philadelphia: I do not wish to take issue with the doctor in respect to this matter of operation, because we may have a low tension and we may have a very contracted field, but that contracted field was due primarily to a tension before we saw the eye. Tension is the first and ultimate thing to pass on and find out regarding an operation.

Dr. E. A. Shumway, Philadelphia: Just one word in corroboration of what Dr. Posey has said as to the trephining operation. I thoroughly believe that at times it is followed by the opacification of the lens, although the operation be technically correctly performed. I have seen it particularly in one case in which I did a trephining on one eye, and so far as I know with a technically perfect operation. The eye was in good condition until about three months later, and then gradually blind opaque spots appeared in the lens, and the lens went on to complete opacification. On the other eye an iridectomy was done and that lens remained perfectly clear. I feel that if I should be operated on for glaucoma I would rather have iridectomy than a perfectly technically well-performed trephining.

Dr. E. B. Heckel, Pittsburgh: Dr. Posey's paper, of course, presumes a diagnosis of glaucoma, but I think just a word will not be amiss as to the subject of a diagnosis of glaucoma. This is not a simple matter by any means, because we should bear in mind that a general iritis may give practically all the clinical picture of the inflammatory glaucomatous condition, with the exception of contraction of the field of vision, and I think we might get that if the media were sufficiently clear to get it. Recently I have seen a few cases in consultation in which atropin had been used and the tension was decidedly increased. In each of these cases the patient was put on atropin and mercurial treatment and went on to very speedy recovery.

I think the indications for operation that Dr. Posey has laid down are quite good. I admire his courage and the results of his courage in formulating his indications, because they are quite expansive. Cases vary so much that what holds good in one case is not true in another, and the question finally resolves itself into the judgment of the man who has the case under consideration. As to the results of the operation, the method or mode of operation, or the operation to be performed, that depends on the operator. Corneal trephining is not a simple thing by any means. I think any one who has ever attempted it once will realize that, although it was heralded as an operation requiring no unusually technical skill. It does require a great deal of technical skill to make a smooth trephine. Of course, it does relieve tension. I have had some cases of sclerocorneal trephining in which there was great improvement so far as the reduction of the tension and maintenance of the vision is concerned. On the other hand, I have some cases in which an iridectomy was done that was absolutely perfect from the surgeon's standpoint, but the case went on to complete atrophy in spite of everything. I think that is the experience of everybody. Regardless of what operation we use we may meet with bad results.

Dr. Posey (closing): Dr. Becker, with his usual acumen, noticed that I did not give rise in tension as an indication for operation. What I did say, however, was that we might be aided in our diagnosis of an increase in intra-ocular tension by the more general use of the tonometer. It is most desirable to know positively sometimes whether there is actually a rise in the intra-ocular tension present. In cases, for example, where there is perhaps a little depression on the outer edge of the optic nerve, with a normal field, and we want some positive evidence that we are dealing with commencing glaucoma, the tonometer is certainly of very great service. Shall we operate in these beginning cases? If it is a hospital case, I say yes every time, because, after an experience of twenty-five years in hospital work, I must confess that I have never found any one whom I could trust to carry out faithfully myotic treatment. Drops are usually stopped, nothing is done and blindness supervenes. It is better, therefore, in hospital cases to operate on such cases at once. If the patient is under 55 years of age, it is very much better to operate anyway, and for the reason that the persistent use of drops over a long period of years is obviated. If vision steadily fails when a patient goes blind under the miotic treatment the blindness is usually absolute, whereas after operation there is usually some slight form field remaining. This, therefore, is an argument in favor of operation.

I am now of the opinion that in such cases all patients under 55 years of age should be operated on. When it comes to considering patients over that age, however, many things must be considered, and the danger of the operation totally destroying all remaining sight in individuals in whom the field of vision has been restricted by the disease should always be borne in mind.

Two cases in my own practice have impressed me greatly: one, a man whom I followed for twenty-five years, who maintained normal vision despite a very limited field for nearly that length of time, under miotic treatment. Another, a woman past middle life, with restricted fields and normal vision, who was doing well under the miotic treatment, and who was rendered incurably blind by an operation at the hands of another at a time when I was incapacitated by illness. The operation was well done. The judgment of the operator, however, to my mind, was at fault.

In summarizing the work of leading inventors in the annals of American invention, Mr. George Iles, in his book entitled "Leading American Inventors," has selected the following representatives: Col. John Stevens—for his screw propeller and sectional boiler; Robert Stevens—for the T-rail and other railroad equipment; Fulton—for the steamship and torpedoes; Ericsson—for the locomotive and caloric engine; Whitney—for the cotton gin; Blanchard—for the copying lathe; McCormick—for the reaper; Howe—for the sewing machine; Goodyear—for the vulcanization of rubber; Morse—for the telegraph; Tilghman—for the derivation of paper from wood; Sholes—for the typewriter.

SYPHILIS AS A FACTOR IN DISEASES OF THE THYROID GLAND*

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Syphilis as a factor in diseases of the thyroid gland seems to command little attention in medical literature, and I was surprised how few references there were in regard to this subject.

Personal experience is limited to five cases in the last few years. The etiology of these cases of thyroid disease, formerly unsuspected, can now be confirmed by the finding of a positive Wassermann reaction and application of the therapeutic test, and if this is done in a routine manner there will be more cases correctly diagnosed, and you will be surprised that it is not as rare a condition as we formerly believed.

Reimers[1] is said to have observed that half the cases of early syphilis show enlargement of the thyroid. Thompson[2] believes involvement of the thyroid in congenital syphilis is exceedingly rare, and Davies[3] quotes Demme as having observed children with gummatous nodules in the thyroid.

Furst[2] observed the case of a child born with goiter of considerable size, which he thought was undoubtedly due to syphilis. Congenital syphilis of the thyroid may produce marked symptoms of exophthalmic goiter, as in a case reported by Clark,[4] in which the symptoms developed in twenty-four hours after birth. A positive Wassermann reaction was obtained in this case as well as in the mother of the patient, and the symptoms disappeared under specific treatment.

Case 1.—In 1912, Mr. S., aged 29, suffering from exophthalmic goiter, was referred to me by Dr. W. B. Ewing. The symptoms were protrusion of the eyeballs, tachycardia 150, marked tremor of the hands, loss of 50 pounds in weight in three weeks, diarrhea, insomnia and restlessness. The thyroid (both lobes) was considerably enlarged, and the hair of the head and eyebrows fell out. Wassermann 2 +. Patient was put to bed and advised to make all arrangements for a complete rest of six or more weeks. Salvarsan was given intravenously, and the dose repeated on the eighth day. Ten days after the first dose of salvarsan was given it was noticed that the thyroid gland had decreased one third in size, the pulse rate fell to 120, and a marked improvement in all his symptoms was noticed. At the end of three weeks the thyroid gland was normal in size and consistency. The pulse was 94, tremor scarcely noticeable, insomnia had disappeared, and the eyes protruded very little. He was allowed to be up and around at the end of the fourth week, and he made a steady and complete recovery. Specific treatment was continued for a year, at which time the Wassermann test was negative, and there was no trace of his former condition perceptible.

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* Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

[1] Osler and Gibson: McPower and Murphy's System of Syphilis, London, 1909, iii, p. 14.

[2] Syphilis: Diagnosis and Treatment, Thompson, p. 386.

[3] Arch. Int. Med., 1910, v, p. 47.

[4] Jour. Am. Med. Assn., 1914, lxiii, p. 1951.

Other cases of exophthalmic goiter, nonspecific, never under my care, showed such rapid improvement and reduction in size of the gland in the same length of time, that I believe clinically this was a case where syphilis was the etiological factor in disturbing the function of the thyroid gland.

Case 2.—Mrs. V., aged 20, was admitted to the medical ward of St. Francis Hospital in 1916. History: Married a year before; one miscarriage at sixth month; pregnant two months; suffering from exophthalmic goiter. Tumor was the size of a small orange, consistency of putty; marked loss in weight, fine tremor, protrusion of the eyeballs, tachycardia 130, Wassermann 4 +. Patient was very nervous and apprehensive. Salvarsan was given intravenously, and repeated in seven days. There was marked improvement in all her symptoms, and slight reduction in the tumor in ten days. Rapid reduction of the gland was not looked for on account of her being pregnant. Specific treatment was kept up faithfully until time of delivery of the child, apparently healthy in every respect. She has been able to nurse the baby since birth in July, 1917, and has gained in weight. The thyroid is still palpable, but greatly reduced from its former size. The pulse is 86, and eye symptoms scarcely noticeable.

If this case had not been complicated by pregnancy at the time of admission, I believe rapid and marked improvement could have been expected as in the previous case.

Case 3.—Mrs. G., aged 42, gave a history of one miscarriage, two children living. Thyroid size of an orange, right lobe much larger than the left; soft and doughy in feeling. Chief complaint: Shortness of breath when walking fast, and difficulty in swallowing when lying on her back; also hoarseness. Loss in weight was not marked; Wassermann 4 +. Salvarsan was given intravenously and repeated in seven days. Five days after the first dose of salvarsan the patient slept the entire night, lying flat on her back, a thing she had not been able to do for several years; and the hoarseness was not so marked. In ten days the thyroid was reduced in size one third, and all her symptoms showed most marked improvement. Specific treatment was continued by inunctions and by mouth for six months; the gland is only slightly enlarged and she is free from all symptoms. Second Wassermann test was refused.

Case 4.—Miss H., aged 19, colored, was admitted to medical ward of St. Francis Hospital in February, 1917. Large colloid goiter the size of a small grapefruit, was causing pressure on trachea. Wassermann 4+. Mother took her daughter home against our wishes before we could institute treatment, so that further observation of this case was denied us.

Case 5.—Mrs. B., aged 29, after five miscarriages and two stillbirths at seven months in which the children were covered with syphilids, gave birth to two healthy children when specific treatment was instituted in early pregnancy. Wassermann 2 +. She had a colloid goiter the size of a large grapefruit when she came under observation before her two healthy children were born. This goiter gave rise to marked pressure symptoms, dyspnea, hoarseness and difficulty in swallowing. Specific treatment was instituted with noticeable reduction in the size of the gland and alleviation of symptoms since the birth of the children. The size of the gland and symptoms can be controlled by the continuance or cessation of the specific treatment, which has happened in several instances when the patient grew tired of keeping up the medication.

In all of the cases cited, the iodids had not been given before the patient came under observation or during the treatment, salvarsan intravenously and mercury by inunctions and by mouth being resorted to.

These cases have been observed solely from a clinical standpoint, but Davies,[3] in reviewing the literature, found ten cases of gumma diagnosed histologically, seven of which were acquired. Three of the patients died, and four recovered under specific medication, while eight cases diagnosed only clinically all recovered under specific treatment. In what manner the disturbance of the function of the thyroid gland takes place it is difficult to say. It is reasonable to suppose the nerve trunks of the neck may be involved in much the same manner that other nerves in the body are affected in cases of syphilis, or the gland may be affected by changes in the blood vessel regulating the blood supply.

Who can say whether a case of colloid goiter will remain as such or pass on to the exophthalmic type, or vice versa? Interference of the function of the gland may cause myxedema. Many physicians have reported good results from the use of iodids in cases of goiter without knowing why; where the Wassermann was not taken, would it not be more reasonable to suppose that if the test had been taken and found positive that they would have just ground for a more rational belief and confidence in the drug?

The diagnosis of syphilis of the thyroid can only be made by the history, evidence of syphilis in other organs, and laboratory findings, including histological examinations and therapeutic tests.

CONCLUSIONS

1. In all cases of tumor or disturbance of function of the thyroid gland, a Wassermann test should be taken.

2. Before operative measures are considered

in any given case, the specific or non-specific nature of the tumor should be determined.

3. The iodids should be withheld as a routine measure until a Wassermann has been taken.

4. Since the application of the Wassermann test, many cases not recognized as being on a syphilitic basis, and extremely rare, are now found to be such, and not uncommon.

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DISCUSSION

Dr. John A. Lichty, Pittsburgh: I can agree with Dr. Simonton that references to this subject are very few in literature. In looking over a rather large collection of references bearing on syphilis and on enlargements of the thyroid which I have made in the last ten or fifteen years I have found no article referring to the relation of syphilis to diseases of the thyroid. You will notice that Dr. Simonton speaks of "diseases of the thyroid" rather than of exophthalmic goiter. It is very well to make that distinction; otherwise one might be led astray. Ochsner speaks of syphilitic nodules being found in children but not in aged or adult individuals. In Faltas' textbook we find reference to the enlargement of the thyroid, or thyroiditis which may be found in acute syphilis in probably 50 or 60 per cent. of all cases. Yet these two references do not bear on the subject as Dr. Simonton has presented it. I think his observations have really been unique to find five patients in the brief time, two years. It must be that he has given unusually close attention to this subject.

In a paper on enlargement of the thymus which I recently read, the writer said that in the outpatient department of a certain hospital so many children were admitted and that so many physicians had seen them. Of these children he saw sixteen cases of enlarged thymus, whereas his colleagues did not see any. This is simply because this writer was looking for cases of enlarged thymus and was able to recognize them. I think Dr. Simonton's paper emphasizes the point that we should look more carefully for syphilitic infections in diseases of the thyroid. It would seem that Dr. Simonton's first case shows more definitely a condition in which there was an enlargement of the thyroid due to syphilitic infection. In the other case the question is a little doubtful.

The enlarged thyroid and positive Wassermann reaction are not always evidence that the enlarged thyroid is due to the spirochete. In the one the enlarged thyroid disappeared because strong antiluetic treatment was administered. That this is positive evidence of the presence of syphilis is a very difficult point to establish. In disease of the aorta or of the aortic valve in patients in whom we have a positive Wassermann we are almost compelled to say that the disease is due to the spirochete infection. Yet it has been found, and I have seen it in necropsy, that such disease is not always due to the spirochete but sometimes to a streptococcus. It is quite likely therefore that one might be misled in the presence of enlarged thyroid and the positive Wassermann. In the only case I saw at the Mercy Hospital in which we had enlarged thyroid and exophthalmic goiter and a positive Wassermann the mercurial inunctions were not successful. The exophthalmos progressed even though the patient had continued rest and every opportunity for recovery. Finally a ligation was done and the patient recovered. The case might show that in not all cases of enlarged thyroid with the positive Wassermann are the two conditions related to each other. We do not know the cause of enlarged thyroid and I am sure that Dr. Simonton would not wish us to infer that the spirochete is the cause. Undoubtedly the condition is due to infection and possibly in some cases the spirochete is the infecting organism.

Dr. C. C. Wholey, Pittsburgh: Over and over again in our daily contact with patients, we are impressed with the fact that the hyperthyroid individual is a hypersensitive individual. My experience in the medication of syphilitic patients who at the same time are suffering from hyperthyroidism has brought to me with added emphasis this fact that the hyperthyroid individual is oversensitive in all his reactions, in the physicochemical as well as in the psychical realm. As an illustration, the most pronounced instance of acute iodism I have seen occurred in a cerebrospinal syphilitic after but two days of rather mild potassium iodid administration; in addition to the distress of the iodism, this patient's slightly enlarged thyroid suddenly increased to an alarming size, and what had been a moderately rapid pulse became one of extreme tachycardia. The tremor was marked and exophthalmos was evident in spite of the greatly swollen lids resulting from the iodism. This patient's blood and spinal fluid were strongly Wassermann positive at the time.

That hyperthyroidal reaction may follow medication other than iodin is illustrated in another of my cases, an early paretic. This patient's blood was strongly plus, and she had moderate hyperthyroidism; antiluetic medication was urgent; three daily inunctions of mercury brought about an acute mercurial poisoning with marked aggravation of her hyperthyroid symptoms. When we consider the well-known tolerance of the uncomplicated luetic to mercury and the iodids, it would seem that such instances as the above demonstrate the extreme sensitivity peculiar to hyperthyroidism. My experience would lead me to conclude that such susceptibility in a luetic is practically pathognomonic of hyperthyroidism.

Regarding the question as to what extent, if at all, syphilis may be a direct cause of perverted thyroidism, my observations, in an experience mainly with syphilis of the nervous system, lead me to conclude that it would be difficult to establish any definite causal relationship between syphilis and perverted thyroid functioning. What syphilis generally does in these cases is in all probability to disturb the glandular metabolism in an individual usually already more or less hyperthyroidal, so that the thyroidal symptoms are brought conspicuously into view. We find this disturbance very generally taking the direction of hyperactivity; and it may become especially noticeable when, under strong antispirochetal medication, additional toxins are suddenly thrown into the circulation, as occurred in the cases just cited. These observations bring me back to the outstanding fact of the extreme sensitivity in every reaction of the hyperthyroid individual.

It is understood of course, that in those exceptional cases where the gland is the seat of gummatous involvement or endarteritis we have in addition to the systemic factor, a local mechanical irritant or direct interference with glandular activity.

Dr. Jacob Rosenbloom, Pittsburgh: Dr. Lichty made the statement that he has not found in a study of the literature reference to an article on the subject of syphilis in relation to the thyroid. I would refer him to an excellent paper on this subject by Dr. Loyd Thompson of Hot Springs, Ark., recently published in the *American Journal of Syphilis.* This paper contains a full bibliography and digest of the literature.

Dr. Joseph H. Barach, Pittsburgh: If I understood Dr. Simonton correctly, he suggests that a Wassermann test be made in every case of enlarged thyroid. Of course no harm will come of making Wassermann tests on thyroid cases, except that we are likely to assume an attitude toward a disease which may prove misleading. That patients with syphilis may have enlarged thyroids goes without saying but that there is any direct relationship between hyperthyroidism in general and syphilis seems very doubtful. If such a relationship actually existed, we would likely have discovered it long before the advent of the Wassermann reaction. We know nothing historically which binds these two diseases. Geographically, we know that goiter is prevalent in certain regions, such as the mountains of Switzerland and in the great lake districts of this country, whereas we do not find that syphilis is any more common in these regions than elsewhere. Pathologically, we also see no relationship between the colloid or any other form of diseased goiter and the tissue reactions set up by the *Spirochaeta pallida.*

If there is one fact that stands out strikingly as a causative factor in hyperthyroidism, I should say it is what Dr. Crile has termed the excessive kinetic drive. Here we see the excessive drive of modern life, stimulating individuals to their highest capacity, carrying them beyond the zone of the physiological and into the pathological. It is true that we see enlarged thyroid in the semi-civilized tribes of the North American Indians of whom we would at first say, surely these people are not suffering from the effects of over-civilization, yet that does not detract from the many evidences which we have, that hyperthyroidism is showing itself more frequently nowadays because of the rapid strides upward on the rungs of the ladder of civilization. In the Indians of the North the strain may be due to the combined strife of a hard life both physically and economically, or it may be due to some chemical change such as may come with the peculiarity of the foods or the water they drink.

In cities, laying aside the possible chemical and pathological causes of hyperthyroidism, we see the children of parents who perhaps for generations and generations have lived only by their physical effort, we see the children of such parents transforming their own lives from the purely physical into one of purely mental activity. With such changes it is no wonder that frequently a break occurs in the normal relationships, with a pathological local expression of this disturbance manifesting itself in the thyroid or elsewhere.

On the other hand if Dr. Simonton contends that there are cases of syphilitic thyroiditis or that hyperthyroidism occurs in syphilis as well as in other diseases and that these cases improve under proper treatment, that of course is true. I have seen five such cases myself within the past year, two of them in the practice of a syphilographer who assured me that while there may be a mild hyperthyroidism in more cases than he expected, he is very certain that outspoken cases are rather uncommon.

Therefore, I would say that syphilitics may have goiter, but goiter patients mostly do not have syphilis.

Dr. Simonton, closing: I specifically stated, and took as the subject of my paper, "Syphilis as a Factor in Diseases of the Thyroid Gland," and not the cause. We may have enlargement of the thyroid gland from a thousand different causes; we may have a thousand different influences that will give rise to it. If, however, a repeated positive Wassermann reaction is present you can see what bearing it has on the thyroid enlargement. We may have a thyroiditis from the tonsils, or from sinus trouble, but it is a different matter when syphilis is a factor in keeping up the disturbance of the gland. If by antisyphilitic treatment you can correct the enlargement you will accomplish something for the patient. In our case it was just by chance that we noticed the marked reduction in the enlargement after the giving of salvarsan. I do not claim that there is syphilis in all of these cases of goiter or that you will demonstrate the spirochete in the gland, or that the toxins are affecting the nerve or blood supply. It will be seen however, that syphilis affects the thyroid gland just as it affects the thymus gland. We can have the gland affected and syphilis coexisting, and yet syphilis may not be the etiological factor in that case. Determine first in each patient with goiter what effect antisyphilitic treatment has on the gland when the presence of lues has been confirmed by a positive Wassermann.

CORNEAL ULCERS *

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A lesion which can interfere permanently with the transparency of the cornea is of serious import. Unfortunately, corneal ulcers in their incipiency are often looked on with small apprehension. This is probably due to the fact that a large proportion of them respond to the ordinary forms of treatment and are not followed by serious sequelae. There are, however, certain types of ulcers which are not amenable to ordinary treatment and in many instances result in gross destruction of corneal tissue or loss of an eye. Infection plays the important rôle in the majority of these cases; inasmuch, therefore, as any corneal ulcer may result in such dire consequence, all corneal ulcers should be considered in a serious light from the beginning.

There are three primary causes for most ulcers. Injury of the corneal epithelium, local disease of the conjunctiva, and keratitis with necrosis and sloughing of the corneal epithelium. From disturbances, therefore, of the corneal epithelium an avenue of ingress is afforded various micro-organisms which may be present in the conjunctiva fold or lacrimal sac. Abrasions, contusions, foreign bodies and burns are probably the most common injuries which are followed by ulceration. In some few instances the infection is carried into the wound at the time of the injury, but in the great majority of cases, it takes place secondarily, either from careless first-aid measures (which includes the application of dirty instruments) or from catarrhal affections of the conjunctiva or lacrimal sac.

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* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

Most ulcers have more or less common characteristics in the beginning, but if they be progressive they assume varying courses, depending on the type of infection, local power of resistance of the cornea and severity of the primary lesion.

In a beginning ulcer, the base of the denuded area is lightly covered with necrotic tissue, the edges are usually ragged and the whole surrounded by a cloudy infiltration, which extends into healthy corneal tissue. This infiltration is often more marked at one point in the circumference, which may indicate in which direction the ulcer may extend. There is a varying amount of conjunctival and pericorneal injection. There is usually pain in the eye, it is sensitive to light and watery.

If the ulcer is small, superficial and not infected with one of the more virulent micro-organisms, healing takes place rapidly. In many instances the process of repair is accompanied by the formation of small blood vessels which arise at the limbus and extend beneath the epithelium to the sight of the lesion. These aid in the regeneration of lost tissue. There usually remains an opacity, but as time progresses, this becomes fainter and the vessels are apparently obliterated.

The more serious forms of infected ulcer come under the head of suppurative keratitis. In the beginning, they may resemble the simple form of ulcer; very soon, however, their course is emphasized by an accentuation of all symptoms. The ulcer extends in area or depth (often in both), the zone of corneal infiltration is enlarged and true iritis develops. From the inflamed iris an exudate is thrown off, which appears at the bottom of the anterior chamber as hypopyon. In the stage of active iritis, pain is severe, extending to the brow and temple, and is more intense at night. If the infection can be arrested, healing takes place with the formation of dense cicatricial tissue and the exudate in the anterior chamber is absorbed. Should the ulcer progress, perforation often takes place. This is accompanied by lowering of interocular tension, which, in many instances, acts favorably on the devitalized cornea. The iris may prolapse into the perforation, in which event it usually becomes incarcerated in the cicatrix. If the infective material enters the interior of the eye following perforation, panopthalmitis is often the result.

Many types of ulceration can be diagnosed from general appearances and clinical history, but, inasmuch as we know that certain micro-organisms are responsible for certain types of ulceration, these ulcers should be classified according to the bacteriological findings.

The pneumococcal ulcer is probably the most important type under this classification. The history of the majority of these ulcers presents the following characteristics. They usually occur in adults of the working class and are subsequent to corneal injuries. They are often located in the center of the cornea and are not usually associated with conjunctivitis. In a proportion of the cases blennorrhea of the lacrimal sac is present. The course and symptoms are usually severe. The ulcer has a tendency to spread superficially and in some instances to perforate. Microscopic examination of scrapings from the ulcer reveals the presence of the *Pneumococcus lancelatus*.

Streptococcal ulcer is not very common, but its course is very rapid and it has a marked tendency to spread in area and depth. Perforation usually ensues. It is often associated with streptococcal infection of the conjunctiva.

Gonorrheal ulcer is a frequent complication of gonorrheal ophthalmia. These ulcers are accompanied by more serious manifestations in the adult. They make their appearance in the pyorrhea stage of the conjunctivitis. They often begin at the corneal margin, due to stasis of secretion from the over-hanging edematous conjunctiva. If centrally located the germ probably finds ingress through a defect in the epithelium.

Staphylococcus albus, aureus, and *citreus* are occasionally met with in corneal ulceration.

As to bacillary infections, ulcers caused by the *Bacillus duplex* of Morax-Axenfeldt are probably the most common. They frequently occur after corneal injury, and in many instances are associated with a history of chronic or recurrent angular conjunctivitis. They are usually small and deep and of slow progress. The accompanying iritis is usually mild.

The *Bacillus diphtheria, Bacillus pneumoniae, Bacillus influenzae* and *Bacillus pyocyaneus* are also seen in corneal ulceration.

In making the diagnosis of the type of ulceration, the presence of conjunctival or lacrimal catarrah should be noted, and a smear preparation of the secretion examined microscopically. The outline of the ulcer may be accurately demonstrated by the instillation of one drop of fluorescein solution. The eye should be closed for a minute and the excess washed out with sterile solution. The ulcerated area now assumes a bright green stain. If the ulcer be of the progressive type, an examination should be made of scrapings from the ulcer. To accomplish this, the eye should be cocainized and washed out with normal saline solution. A sterile spud or needle should be employed and a small amount of material from the floor or advancing edge of the ulcer removed. This should be stained after the Graham method and examined. Thus, having a knowledge of the type of infection directly or indirectly associated with the ulceration, we are enabled to follow a specific form of treatment.

In the treatment of ulcers, any existing source of infection or irritation due to lacrimal or conjunctival disease must receive attention. If the ulcer is of the simple type, and there is no evidence of active infection, the field can be kept clean by frequent flushings with boric acid solution followed by instillations of 25 per cent. solution of argyrol. The eye should be put at rest with atropin, and an occlusive bandage worn.

If there is reason to suspect infection, the eye should be cocainized and the ulcerated surface lightly cauterized. Should the ulcer progress and symptoms of acute iritis develop, the patient should be given an active cathartic and put to bed. The atropin should be pushed and accompanied by instillations of 5 per cent. dionin solution with the object of obtaining full mydriasis. Hot compresses frequently applied relieve the pain and stimulate the depleted cornea. In severe cases daily mercurial inunctions and hot packs are of great benefit.

As to the local treatment of the ulcer, it may require frequent cauterization before the infection can be controlled. Pure carbolic acid or thermocautery (to a red heat) are reliable agents for this procedure. Advanced ulcers which threaten to perforate and in which the hypopyon may become organized should be incised after the method of Saemisch or the pus evacuated through a linear incision.

In regard to specific treatment for ulcers due to pneumococcal infection, the antipneumococcus serum of Romer has not proved as efficient as expected. A later discovery in the form of the germicide optochin (ethylhydrocuprein) introduced by Morgenroth seems to have many advocates.

In diplobacillus conjunctivitis, solutions of zinc sulphate seem to be a specific. It certainly has proved its worth in corneal ulcerations due to this micro-organism. It is generally employed in the strength of from 1 to 2 grains to the ounce. A few drops should be instilled every two or three hours.

The great majority of ulcers, in which there is an absence of conjunctival secretion, are benefited by the application of an occlusive bandage.

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DISCUSSION

Dr. Edward Stieren, Pittsburgh: Quite a number of patients with ulcers come to us at the South Side Hospital and, after determining what the organism is, we have a routine treatment of atropin, dionin and hot compresses. In the majority of cases this is sufficient but, as Dr. Renninger has said, all ulcers will not heal promptly, and become infected, resulting in suppuration of the cornea and eventually panophthalmitis. I have not yet made up my mind as to what is the best cauterizing agent for infected corneal ulcers. We use various chemicals, tincture of iodin, trichloracetic acid and carbolic acid. You can cure some cases with one thing and some with another, but others persist in spite of everything you do. I think one of the best aids, at least in my hands, where we have an infected corneal ulcer and probably great loss of tissue going on to threatened perforation or, even where actual perforation of the cornea has occurred, is a remedy that we are too apt to lose sight of in this day of improved remedies, and that is nitrate of silver. In addition to the routine treatment we use, once, or possibly twice a day for very severe cases, an application of 10 per cent. nitrate of silver to the inverted lids, letting the solution flow over the cornea and then flushing with normal salt; in addition to this, and which I consider of the greatest importance, probing through into the nose and flushing the lacrimal nasal canal with the same solution of nitrate of silver at least once a day. There are cases, of course, which resist and rebel against all these methods, but the point is that the majority of cases of corneal ulcer will heal under the routine treatment. Some of you may have had an agent which will heal in all cases, but that has not been my experience.

Dr. D. I. Giarth, Ford City: I wish just to emphasize Dr. Stieren's reference to the care of the lacrimal duct. I have found that a very important factor in the infection of the eye. The lacrimal duct must have proper care, and I assure you that the nasal secretions obstructed by nasal stenosis is a source of infection which can be carried into the lacrimal duct and into the eye. I consider that Dr. Renninger and Dr. Stieren made a very important suggestion in referring to that part of the treatment.

The care of corneal ulcer and keratitis I certainly follow out as has been suggested here, and the use of argyrol adds much to the therapeutic treatment.

I use atropin and eserin, alternating to keep the pupil mobile and avoid adhesions of the iris, or synechia. I assure you that corneal ulcers are a painful disease and the patient is very thankful to have the use of a little cocain occasionally. I want to say that I am not in favor of the use of the cocain solutions, to the extent of forming the habit. I have the greatest respect for cold and hot water compresses when they are applied systematically and under proper antiseptic precautions.

Dr. L. H. Taylor, Wilkes-Barre: I think that we all agree that the majority of these ulcers are caused by traumatism, by foreign bodies in the eye, and of course if we could only see these injuries in time and remove the foreign bodies under proper precautions, we would have very few corneal ulcers. I believe that after removing the foreign body from the eye it is a distinct advantage to put in fluorescein and allow that green coating to remain. Of course it does not remain very long, but I do believe that it has a distinct antiseptic value.

As to the treatment of the ulcers afterward when they become severely infected, I came to the conclusion long ago that the very best application is the galvanocautery. I tried a series of cases for quite a while, using the carbolic acid and the iodin alternately, taking first one case with the iodin and the next case with the carbolic acid, and so on, for quite a number of cases. It is a very difficult thing to say which one would be the better. I think they are both good, very excellent, and in many of these cases any remedy of that sort, such as iodin, carbolic acid, even nitrate of silver, or the cautery, is good treatment.

If the infection is not severe, as routine treatment after a thorough cleansing I always apply thoroughly the iodin. But if in the next day, or the second day, there is a tendency to extension, I believe that the cautery is the very best application you can make.

Dr. J. F. Klinedinst, York: I think quite a number of corneal ulcers are due to injuries of the eyes of employees in manufacturing plants, due to traumatism from fine particles of emery and metals. Some fellow employee or first-aid man will attempt their removal and, not knowing the principles of aseptic treatment of the eye, infection results. In these cases of infected traumatic corneal ulcers, as the previous speaker said, each of us have a different treatment. I have found that a thorough application of trichloracetic acid is more effectual than carbolic acid or iodin, either in solution or the pure acid. In corneal ulcers with severe infection and threatened perforation the careful application of the electric cautery has helped me in many a case. While the majority of corneal ulcers result from infection, we must remember a predisposing cause is often due to low resistance of the cornea, the result of disturbed metabolism, or some chronic systemic condition. These slow-healing ulcers I have found are often stimulated to recovery by the internal use of quinin sulphate. How it acts I cannot say, perhaps by its tonic effect on the whole system. Again, as has been said, some ulcers of the cornea are infected from associated chronic inflammations of the nares and nasal accessory sinuses. Where this condition exists I give the patients alkaline and antiseptic nasal solutions in connection with the local treatments.

Dr. G. R. S. Corson, Pottsville: Dr. Klinedinst mentioned something in regard to the low vitality, the lower resistance. We, practicing in the hard coal field, find that the most trivial injury to the cornea in the coal miners is extremely liable to lead to these results. It has been my experience over and over again with large numbers of cases where it seemed to be just a little bit of a scratch or a very small body on the cornea, that very bad results would follow, and finally often enucleation would result. I have been searching the literature and asking some of the readers in this line, and I have not had a satisfactory answer. There may be some here who have followed it out, and possibly can answer this question. There are men who have these sustained injuries to other parts of the body which heal up promptly, but injuries to the cornea are very bad.

I wonder if it is not the conditions under which they work? We cannot lay it to ventilation, because they are well otherwise. Some of our men in the mines work several hundred feet below the sea level, and with the sulphur water and with everything that they encounter it is a question what it is that has to do with the seriousness of the corneal ulcers.

Now one other word, I simply second what somebody has said here. I have tried cauterizing, I have tried iodin and carbolic acid and silver, and in my opinion there is nothing that equals the trichloracetic acid in strong solution. I used to use 20 per cent. but now I use a saturated solution. I am very careful, of course, just to touch the ulcerated area.

Dr. Carlisle E. McKee, Pittsburgh: I would like to know if there is any gentleman present who can conscientiously say that he has seen any improvement from the standpoint of clearing up the ultimate scar from corneal ulcers by any of the so-called electrotherapeutic means. Outside of the dieting and the use of yellow oxid, do you know of anything that amounts to anything with which you can clear up a corneal scar?

Dr. Giarth: In the treatment of corneal opacities following corneal ulcers, by the use of finely powdered iodoform and dusted with cotton applicator and massaging with the upper lid, I have been able to clear up those opacities in a satisfactory manner. I begin early the use of it at the office and instruct the patient to treat himself at home, following Professor Fuchs' method. As to the use of trichloracetic acid in acute stages of corneal ulcers, Dr. Corson failed to state the results of the acid on the ulcer. I use it but I use it with great care, and use it on the periphery of the ulcer only, following it up immediately with a weak alkaline douche to counteract the acid; otherwise you will have a dense opacity following the cautery effect, and difficult to be absorbed.

Dr. George H. Cross, Chester: It seems to me that lately I see a great many corneal ulcers that are developed in men from large manufacturing plants, and they are nearly always caused by failure completely to remove the foreign body. We have a great many men in our section using pneumatic tools, emery wheels and grinding stones, and I find that where a foreign body lodges and results in ulcer it is generally from the incomplete removal of the same from the eye by the first-aid man or the surgeon at the plant. My best results are always obtained in the complete curetment of the ulcer after removal of the foreign body. After the scale or whatever it is has been removed, I treat it with carbolic acid. It is very hard to get these men to return for further treatment.

Dr. E. B. Heckel, Pittsburgh: Corneal ulcer is always a live subject. I want to enter a protest against the use of argyrol. I have long since discarded its use because it does not have any germicidal qualities. I think we will all agree that generally considered, argyrol is not a germicide, and that the only value it has in the eye is its great specific gravity. It will get down into the crevices and wash out objects that may be there; in this way it is a cleansing agent, but I have discarded it absolutely except for postoperative procedure. With distilled water as a vehicle for it I use mercury cyanid 1 to 3000 as a germicide.

I think the proper way to regard an ulcer is to look at it as simply a localized necrosis; the cornea having no blood vessels in it the corneal repair is very slow. Anything we can do to help along nature will help to cure the corneal ulcer. If we have an ulcer in any other part of the body we should proceed to curet it and get it absolutely clean and give nature a chance, but it is not always advisable to do that in the cornea because we may destroy a good bit of tissue, and by its destruction produce considerable necrotic tissue.

Whether we use actual cautery or some chemical agent depends largely on the situation of the ulcer. Actual cautery is a very good agent, but the resultant scar, I believe, is a little more pronounced than it is after the use of a chemical cautery. As to chemical cautery, it depends entirely on the man who uses it and the amount he uses. I am very careful to cauterize not only the ulcer itself, but around the edge and to cauterize very thoroughly because often the edge of that corneal ulcer will overlap. At the recent meeting of the Eye Section of the American Medical Association in New York, Dr. Wood called particular attention to overlapping of the edge of the corneal ulcer, thus harboring some material and pathogenic germs that will produce a great deal of harm; by extending the corneal cauterization out into the cornea you get rid of any necrotic material.

As to the treatment of the patient, if the corneal ulcer is of any severity at all I believe that the patient ought to be put to bed and I believe that hot baths are very excellent, and hot pads are also a very excellent remedy. Hot pads must be applied continuously and very thoroughly or they are worth absolutely nothing. It is not what you do but how you do it. Of course that obtains in medicine generally, and I think it especially obtains in the treatment of corneal ulcers.

In the removal of all foreign bodies we always follow the general rule of using a solution that is made of mercury cyanid, 1 to 3000, and the instruments with which the foreign body is removed are sterilized. After the foreign body is removed the eye is flushed with a solution of mercury cyanid 1 to 3000. When I say flushed I mean the solution is dropped into the eye and allowed to flow over the eyeball, and the minute it comes together the patient is dismissed with the understanding that if the eye annoys him any after twenty-four hours he shall report back immediately. In that way I think we very frequently avoid infection. If the ulcer is infected or if the spot where the foreign body was lodged, in the central or peripheral portion of the wound, is already infected, the corneal wound is curetted.

Another scheme that I use is curetting with a cotton carrier using mercury cyanid 1 to 3000. Wrap cotton quite tightly around a small ordinary cotton carrier and with clean hands dip it into mercury cyanid, 1 to 3000. With that scrape the cornea, as it were, and you can get rid of practically all of that necrotic material without inflicting any unusual or unnecessary trauma on that cornea.

I believe the persistent use of dionin is worth a great deal. I mean to use it not only two, three or four weeks, but three, four, five or six months if necessary. If that is kept up I think it will do good. I do not believe in tackhammer shocks. I use a 4 per cent. solution of dionin and keep it up twice a day, and I have those patients that are using it for a long time use it every day except Saturday and Sunday. I think we get better action in that way, and if kept up continuously for a long time it does a great deal of good.

HYPERTHYROIDISM AND MENTAL DISORDERS *

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In goiter and hyperthyroidism the psychopathic phenomena are not as a rule the most prominent; the great majority of sufferers escape the asylum, although they suffer from typical mental disturbances. The clinical picture of this disease is one of toxemia with sensory-perceptive, motor, nervous and digestive disturbances.

Although we know that the symptoms are due to toxemia the result of absorption of the products of a hyperactive gland we do not yet know the stimulus which causes the perverted glandular activity. It may originate in the intestinal tract from substances taken into it or from a breaking down or synthesis of organic or inorganic substances; it may result from substances produced by conflict between pathogenic organisms (or other external irritants) and the body cells and fluid; or it may be due to lesions of the central nervous system and the sympathetic. But we do know that, whatever the stimulus, changes in the thyroid function, and particularly hyperthyroidism present, as criteria of the resulting toxemia, certain symptoms or groups of symptoms which constitute a very definite clinical picture.

These symptoms are associated together by the common factor of histological change in the thyroid gland, or in portions of the gland. Whether we regard these "reactions" as forerunners or as stages of goiters we must be impressed with the very close resemblance of most of them to the symptoms of intoxication and of exhaustion. Prominent among these symptoms are: (1) A cardiac erethism with exceptional heart activity, irregular or rapid beat, sometimes even with dilatation and hypotension of the arteries and, perhaps, dyspnea on exertion; (2) general muscular weakness, occasionally with a sudden giving way of the arms or legs; (3) profuse sweating—the patients sweat easily and freely about the head, face or body; (4) dyspepsia which may be constant and distressing, epigastric and abdominal pain after eating or coming on during the night, occasionally nausea and unexplained vomiting, diarrhea, but oftener constipation; (5) rapid emaciation or loss of weight; (6) mild bilateral tremor of the spread fingers; (7) tumor, or enlargement of the gland, perhaps with thrill; (8) exophthalmos, with widening of the palpebral fissure, lagging of the lids, or lack of convergence of the two eyes. With these there are also (9) headache, and sometimes migraine; (10) insomnia; (11) "nervousness and anxiety" (apprehension) with irritability or apathy, excitement, restlessness, loss of memory, indecision of the will, doubts and fears of an obsessive nature, and preoccupations which may concern themselves with any subject.

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* Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

Tachycardia is usually held to be the early, leading and important symptom; but equal in importance is extreme nervousness without other demonstrable exciting cause. So important are these two indications that it is now generally held that in all cases presenting the symptoms of tachycardia and extreme nervousness the possibility of hyperthyroidism should be considered.

In this paper I shall briefly review the well demonstrated and generally recognized clinical manifestations which have to do with the central nervous system. The most exaggerated symptoms occur in the acute toxic case of exophthalmic goiter. There is elevation of temperature, extreme restlessness, tumultuous heart action, nausea and vomiting, epigastric and abdominal pain, loss of weight and emaciation, active delirium followed by stupor which precedes death. It looks and, clinically, is like a violent septic intoxication. All the bodily symptoms are here overshadowed by the mental symptoms. The clinical picture, from the mental aspect, is characterized by the syndrome "amentia," *i. e.*, by a more or less violent confusion.

Whenever encountered, this syndrome indicates either marked destructive alteration of cerebral cortical cells, or the action on them of toxic substances. Whether the toxic substance be developed within the body or is introduced from without it exerts an injurious influence on the delicately constituted cortical cells and their interconnecting fibers. The associative mechanism is thus prevented from performing its work properly; delays and interruptions occur along associative tracts between areas of special sense perception; there result feelings of strangeness and unreality, bewilderment, confusion and oppression, together with excitement, or depression, sometimes with illusions and hallucinations.

Less spectacular mental symptoms characterize milder cases of exophthalmic goiter than the rapidly fatal form first described: Attacks which may be mild or severe, very closely resembling those which develop from coprostasis in adults, and those which so frequently result from gastro-intestinal disturbance during childhood, as of night terrors after indiscretions in diet. These transitory attacks of excitement, with confusion or delirium, are commonly encountered at some time during the course in all cases of long duration. They here develop in the soil of temporary exhaustion and nutritive damage suffered by cerebral cortical cells as a result of the thyroid toxin. We may compare this nutritive damage to that underlying those states of organic exhaustion resulting from pneumonia, erysipelas, typhoid fever, the puerperium, etc.

As in the toxins of the infectious diseases, so here, the thyroid toxin not only endangers the vitality of the nerve elements, but may also elevate or depress their condition of excitability; and the effects of such stimulation or depression may be combined in a great variety of ways.

Where the effects of overstimulation, or of depression are long continued they result in morbid moods. In the toxemia which is due to hyperthyroidism and goiter we frequently encounter the moods of depression and of anxiety; these moods attract, or select, all the experiences of the organism which they further discolor to their own shade. That these moods are precipitated by the thyroid toxin is further proved by their course.

Many cases of hyperthyroidism are marked by suspicional attitudes, with mild delusions, coming on in the form of "attacks." Sometimes ephemeral, again of longer duration (weeks or months), such symptoms are rooted in a clouding of consciousness; this clouding, though moderate, is of sufficient intensity to prevent the patient from marshalling ideas before the mind's eye so that erroneous ideas are corrected or controlled—and the need of correction of morbid ideas is an ever-present one in goiter; for in the chronic state of exhaustion due to hyperthyroidism, morbid ideas associated with feelings of injury, of jealousy, of shame, self-blame, dread, fear and anxiety very commonly dominate consciousness with obsessive force. But slight excess of the thyroid poison is needed, in such cases, to develop hallucinatory states of varying degrees of vividness and of quite as variable duration. In the mechanism of their development such symptoms differ in no wise from hallucinations produced by other poisons. The hallucinations of goiter are thus explained; for, as elsewhere in psychiatry, they arise under the influence of morbid stimulation of the cerebral centers which are concerned in the process of perception.

Tanzi writes: "Cases of exophthalmic goiter which present hysterical phenomena should be regarded as latent hysteria brought to the surface by exophthalmic goiter. It is the hyperthyroidism which evokes the syndrome. Because of the associated symptoms of exophthalmic goiter we can clearly determine that it is the thyroid toxin which has initiated the hysteria, just as it initiates the sensitiveness, the depression and anxiety which are common manifestations of thyroid disease. There may have been a susceptibility to acquire hysteria, but this does not negative the fact that the hysteria has been manifested through the external determinant — the thyroid toxin."

In addition to these hysterical states we encounter cases which present the milder degrees of anxiety and self-absorption grading all the way from obsessive doubts, fears and preoccupations which concern themselves with any subject, on through states of irresolution, incapacity for mental work, irritability, querulousness, timidity and indecisions of the will. From the grave and rapidly fatal cases of acute toxic exophthalmic goiter and those marked by the syndromes of melancholia or of mania, on through the milder manifestations, we have to do with psychical symptoms which exist as secondary results — as indirect echoes of the disturbance which has taken place in the thyroid function: they accordingly present resemblances and contrasts which connect them closely with each other (Tanzi).

Let us study the mechanism by which these symptoms are brought about. We know that defective metabolism resulting from the acute infectious diseases, and the consequent exhaustion of all the vital functions, is the external determinant of variform psychotic symptoms. So also is the disturbance of physical health resulting from interrupted sleep and the reaction of a constant and gnawing habit of worrying upon the digestive and circulatory functions. How much the more readily are such results produced when an organic poison is added to the above-mentioned disturbing factors, a poison, moreover, whose influence is exerted in a way that early lessens the functional capacity of the circulatory mechanism (both heart and arteries); one which, in its further passage through the body, by way of the circulation, has abundant opportunity to exercise its injurious influence upon the nutrition and the activity of other tissues and organs; not only heart muscles, hepatic and renal epithelium, but upon cerebral cells as well.

Crile's findings, in his examination of brains of patients dead of exophthalmic goiter, are almost identical with those which result from long-existent intoxication and exhaustion processes, where the circulation has been laden with noxious products which are but incompletely cast off; where, in addition perverted glandular secretions have contributed their quota to the intoxication process, and where, through the heart muscle partaking of the general asthenia, there has been further diminution in the amount of nutriment supplied to the brain. These are the underlying bodily conditions which provide the chief requisites for the psychical syndrome of "confusion," with delirious episodes. But, it must be remembered that toxic substances developing external to the brain, and more or less continuously exerting their influence upon the brain cortex, may engender not only the cardinal symptoms of insanity (illusion, hallucination and delusion); they also supply the bodily conditions which underlie mental malfunctioning as exhibited in weakness of memory and attention, in narrowing of the field of consciousness, with the inevitable concomitant of obsessive tendencies, impulses, suspicions, excitements and depressions. Traced to their underlying anatomical substrata we find the evidences of a work-exhaustion in hyperchromatism and chromatolysis of the cells of the cerebrum, cerebellum, medulla, and even of the spinal cord.

We know that the cell-body represents the trophic center par excellence of the neurone's mechanism, and that upon it the activity of the nervous process depends. We know, also, that intoxications and nutritional disturbances act first upon it and to a greater degree than any other part of the neurone. We know also that the emotional tone of the individual depends upon the nutritive state of the cortical neurones; for when there is impairment of nerve-cell nutrition from any cause, feelings of depression and of incompetence and helplessness arise, with resulting anxiety, fears, doubts, indecisions and irritability. The irritability of these patients often leads to quarrelsome tendencies, and very generally there is an incapacity for continuous mental application, in which we have adequate explanation for the feeble performance which characterizes all their attempts at activity. All these psychic symptoms are quite in keeping with the general muscular, cardiac, secretory and excretory weakness and incoordination which stand out so prominently on the physical side; and we cannot fail to regard them as but different aspects of a disease the cause of which is disorder of the thyroid gland and adnexa — a disorder which may develop either gradually or suddenly. In either instance it may produce nutritive disturbance in the cortical centers which pave the way for that condition of "irritable weakness" of the nervous system which, whether it extends over periods of weeks, months, or years, furnishes a suitable soil for the development of a psychosis. When this is associated with a congenital weakness or instability of the nervous system the danger of mental breakdown is, of course, proportionately increased.

The thyrogenous psychoses not only illustrate the importance of the toxic factor in the pathogenesis of psychic symptoms, but they further emphasize the fact that "the brain, which is extremely sensitive to all poisons, reacts to those which are produced within the organism not less intensely than to those which are derived from the outside" (Lugaro). Furthermore, in their mechanism they present a more than superficial resemblance to those special or peculiar psychic symptoms which constitute the hall-mark of the intoxication and exhaustion psychoses, where we see the results of circulating toxins as earliest expended upon the neural structure which supports the latest developed function of associative memory and consciousness.

Whether the toxin exerts its injurious influence through acting over long or short periods of time the results are reflected in consciousness; there is a feeling of inadequacy to deal with events in the environment; out of this grows an anxious depression, with a feeling of uncertainty and impotence in the face of every circumstance. A sense of strangeness, with an inability to correctly interpret inpouring impressions, whether from the bodily processes or from the outside world, commonly furnish foundations for suspicional attitudes and persecutory ideas; anxious and troubled dreams, with transitory deliria, complete the resemblance; disturbing illusions and hallucinations are but a further step, and these (in hyperthyroidism) may present special characteristics.

All these phenomena, in variform shadings, do we find associated with disorder of the thyroid gland. Generally regarded as superimposed upon goiter, in reality they are manifestations of the disease (Tanzi).

In this paper I have dealt largely with the somatic origin of the mental and nervous symptoms which accompany disorders of the thyroid gland. Based as they are, upon altered nutrition of brain cells, we have resulting impairment of that great regulative action of the higher cortex on the nutrition of all the tissues and the functions of all the organs, which may undergo a steady deterioration. The mental, motor and trophic nerve centers lose their resistive power. A vicious circle is soon established, and we have not only intoxication of cerebral cortical cells by the perverted thyroid secretion and the altered nutritive fluids, but because of the impaired circulatory activity the brain fails to receive sufficient nourishment. This explains the cerebral asthenia, which becomes manifested in irritability, insomnia, dizziness, tremor and morbid fatigue consequent upon either motor or sensory innervation—all this rendering the patient a mental and physical wreck, incapable of effective effort of any sort. It would seem as though every function of the body were involved, thus bringing into one pathologic circuit the various vegetative, organic and mental functions, for all are involved in some degree.

Individual cases present, of course, great variability in the symptoms, both psychic and physical; but in this they do not differ from any other psychosis or bodily disease. Variability is to be noted in the severity and extent of symptoms produced by other toxemias and intoxications; and this may be explained by variation in the individual degree of resistance. Just as the individual who alcoholizes himself is not an indiscriminate entity, but presents varying degrees of vulnerability, or resistance; just as the power of recuperation is an inherent capacity varying in individuals suffering from the same disease, so also the histological changes in the thyroid gland may vary widely under the functional stresses to which it may be subjected, and so also its degree of restoration to functional balance may vary with the inherent capacity for recuperation in the individual. Thus, there are enlargements of the thyroid gland which normally occur during certain physiologic storms which assail the organism, e. g., menstruation, pregnancy and the puerperium; (2) in other cases enlargements are concomitant with gastro-intestinal disturbances, infections, etc., or (3) they may be coincident with or consecutive to psychic shock from sudden fright or from long-drawn-out indulgencies in the painful emotional complexes of shame, rage, feeling of injury, grief or anxiety.

Where we find a preponderance of the mental over the physical symptoms (and this is not rare clinically) it may be explained by a relative vulnerability of the cerebral cortical cells. The patterns presented by the mental symptoms will, of course, vary with the experiences to which the individual has been subjected; but, in a general way, they are marked by excitement, depression, anxiety and restlessness, weakened memory, various kinds of indecisions of the will, doubts of an obsessive nature, and preoccupations which may concern themselves with any subject. The sufferers may become irresolute and incapable of any work, and they are often irritable, diffident, quarrelsome or timid. Excitement, with the restlessness, loquacity and insomnia on the one hand, or the phenomena of anxiety and self-absorption on the other, have generally been regarded as mania and melancholia superimposed upon exophthalmic goiter, but these, as also the milder psychotic symptoms, are to be regarded as having origin in the perverted activity of the thyroid gland.

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DISCUSSION

Dr. Paul Titus, Pittsburgh: For a long time I have been particularly interested in the mental disturbances which are seen so often during pregnancy and the puerperium. Some of these have been of such a minor degree that they are merely "mental disturbances," to quote Dr. Walker, while others, unfortunately, are by no means so mild.

The practical application of the conditions outlined in Dr. Walker's paper is exceedingly important, and I know of no field where such an application is more important than in obstetrics. The insidiousness with which mental disturbances creep on in obstetrical patients and the vital necessity of their early recognition in order that they may be successfully combated before permanent damage has been done will be disputed by none.

Dr. Walker has pointed out that the clinical picture of hyperthyroidism is one of toxemia, and he has called attention to the resemblance of the symptoms to those of intoxication or exhaustion. Add to this, then, a moderate degree of toxemia, such as exists in almost every pregnancy, and a vicious circle is easily established, especially when one considers that there is usually enlargement of the thyroid due to the pregnancy itself.

Most of the textbooks on obstetrics discuss these things in a superficial fashion, speaking of the change in disposition seen in pregnant women, telling how they become irritable and short-tempered, how they have foolish fancies and whims that must be gratified in order to keep peace in the household, but the authors do not go far into the underlying causes or the possible effects.

It has been my privilege during the past few years to see quite a number of cases of mild mental disturbances during pregnancy and also a few cases of puerperal mania with Dr. Walker, and I have been impressed by the necessity of the early recognition of the premonitory symptoms of a mental breakdown in such cases in order that just such a state may be avoided. I feel certain that in some few cases we have been able to avoid puerperal psychosis by promptly instituting treatment along the lines of rest in bed, elimination and diet and exceptionally by emptying the uterus. Certainly the great majority of our patients who have shown mental symptoms accompanied by a certain amount of toxemia have been markedly benefited by the treatment we have followed out.

In practically all of them we have been able to demonstrate the relation between hyperthyroidism and toxemia of pregnancy, while the cases of puerperal mania almost invariably showed marked thyroid disturbance. It is perfectly proper to call these the psychoses of pregnancy or the puerperium, because it takes a strain like pregnancy or a hard labor or a puerperal infection literally to turn them loose. If, however, one will keep in mind the facts that Dr. Walker has outlined in dealing with these cases, and I am speaking purely from the standpoint of men doing obstetrics, many disastrous results along mental lines may be avoided. If a pregnant patient exhibits symptoms of hyperthyroidism treat her accordingly. She is toxic and will become more so. If she fails to improve, her case becomes one of typical toxemia of pregnancy, and the continuance of the pregnancy ending with a hard labor may result in eclampsia or a mental breakdown, as the case may be. Certainly there is little choice between the two so far as desirability is concerned. If she develops pronounced insomnia, is "nervous and anxious" or morbid, becomes restless or excitable, things are far from right with her, and occasionally very radical steps must be taken. Induction of labor may become necessary, or the strain of second stage could be relieved by the early application of forceps. Following her labor when exhaustion has become an additional factor, sleep and rest must be obtained at almost any cost, even to the use of large doses of hypnotics, and the weaning of the baby if lactation is adding to her exhaustion.

I regret that my knowledge of hyperthyroidism and mental disturbances is exceedingly limited, and that in speaking of them my viewpoint is only in their application to obstetrics. My excuse for discussing this paper is that in obstetrics there is a large field for the investigation of the milder disorders arising from this source, and also that the application of the points Dr. Walker has brought out is most important in this very field.

Dr. H. Ryerson Decker, Pittsburgh: Dr. Walker has presented the part of the subject which seldom appears in print and has sensed a real live issue in hyperthyroidism. He has emphasized the mental symptoms which develop in the course of the disease and the circle of relationship that is established between the thyroid and the cortical area, with its clinical results. Several results may follow the action of thyroid toxin in cortical cells. The individual may suffer mental distress, which may not improperly be labeled mental pain. Again, the inefficiency which obtains in hyperthyroidism is due quite as much to effect of the toxins on the cortical areas as to their effect on the vascular system. There is a certain group of cases, I believe, in which mental symptoms predominate, and in which the individual may go along and not realize exactly the cause of such mental symptoms. It will be found, however, in the course of examination that the patient has enlarged thyroid. There may be no other physical signs. There is then the mental picture plus the enlargement of the thyroid. I think a proof that the thyroid may be responsible for the mental symptoms rests with the operative result. It has been my experience in several cases that the vicious circle Dr. Walker has spoken of has been thus broken by the surgical interference and the mental symptoms have disappeared.

Dr. Frederick B. Utley, Pittsburgh: The points emphasized by Dr. Walker are of special value to the practitioner of internal medicine, for it is he who sees the vast majority of these cases first, and it is he who should recognize the patients as suffering from a deranged activity of the thyroid gland. However, I fear that he often overlooks the true significance of the case, classifying it as either one of nerve exhaustion or prostration, or hysteria or neurasthenia, or if the mental symptoms be more acute as one of the true manias. A carefully taken history carefully studied in conjunction with a complete physical examination will often point the way to a correct diagnosis or at least to a possible diagnosis to be confirmed if need be by a consultant.

As Dr. Walker has suggested, in a well-established case of hyperthyroidism with mental manifestations, a vicious circle is established. As a result of the poor circulation the cortex is poorly nourished, which results in a brain asthenia. This gives rise to the feeling of incompetence, indecision, helplessness, and later to irritability, worry, insomnia, or in the more acute cases to acute mania. The indication is to break this vicious circle, which is best accomplished by removing the cause as far as possible, namely, the overactivity of the gland. This I believe is best accomplished by prolonged rest in a quiet, congenial place, free from all disturbing elements. Certain medical measures are helpful adjuncts, such as the use of the ice bag locally, of syrup of the iodid of iron internally and the bromids in carefully graded doses. A well-regulated diet with free elimination is of course essential. If after a prolonged rest the patient does not show considerable improvement which is lasting, then I believe surgical advice should be sought.

Dr. Thomas R. Currie, Philadelphia: Had Dr. Walker read to us the histories of his cases, I feel sure, from my experience as a general practitioner for over twenty years, that he would have told us that most of his cases were of persons in the professions, art and teaching; of school girls in their late teens under stress of examinations; or, perhaps, in men and women who have been subjected to the horrors of a railroad accident. In my experience cases of hyperthyroidism with mental symptoms have been in that class of persons. Also young women of highly nervous temperament, subjected to the "slings and arrows of outrageous fortune," are very apt to become subjects of hyperthyroidism; so frequently is this the case that I sometimes wonder if these highly nervous people are not already victims of incipient hyperthyroidism.

Dr. C. C. Wholey, Pittsburgh: Dr. Walker's paper gives in brief but clearly understandable form a vast amount of valuable data on both the physical and mental symptomatology of hyperthyroidism. It is the expression of a large personal experience combined with close and accurate observation, and gives us the varied symptomatology in a compact way which would be extremely difficult to collect from other sources.

I cannot too often repeat the statement that hyperthyroidism means hypersensitiveness in all a patient's reactions. The surgeon recognizes this extreme sensitivity in the psychic realm in the precaution he resorts to in order to safeguard the thyroid patient against the damaging physical effects resulting from fear and anxiety. Crile of Cleveland resorts to the tedious route of "stealing the gland," and of applying his anoci technic in his goiter cases, realizing that hyperthyroidism means hypersensitivity, and that unless he can circumvent the added toxicity and exhaustion induced by the purely emotional reactions resulting from fear and anxiety, the chances of the operation proving successful will be materially lessened; in certain cases will almost certainly fail. Thus the surgeon, aiming primarily to conserve the physical wellbeing of his patient, becomes the practical psychiatrist in recognizing the gravity of psychic factors present in hyperthyroidism.

Such cases coming to the surgeon represent generally advanced stages of perverted thyroid activity; those reaching the alienist because of a psychosis also represent advanced stages. But before these patients reach either the surgeon or psychiatrist, there is almost universally an extended period of thyroid morbidity. If this were generally recognized, and proper therapeutic measures of rest, ice applications and environmental regulations instituted, many of these cases might never reach the operating table or psychopathic ward; and a vast amount of neurasthenia and hysteria, with their resultant incapacity to the patient might be avoided, along with the family misunderstandings, and the unhappiness so often attending the existence of the hyperthyroid individual.

Dr. Walker (closing): I have dealt with some of the mental symptoms encountered in hyperthyroidism and goiter as exhibited by cases presenting also the somatic signs which are now recognized by every one. The course in many cases proved the cause; for the symptoms disappeared, or were greatly improved under appropriate treatment for the glandular and associated disorders. In a few selected cases removal of a portion of the gland has been a necessary step, preliminary to the prolonged rest in bed, therapeutic, and later regimenal measures.

CAUSE AND TREATMENT OF CONSTIPATION IN INFANTS AND YOUNG CHILDREN

In discussing this subject in the September *International Clinics*, Dr. C. G. Grulee summarizes his view as follows: "I would like to urge that catharsis be abandoned as a routine treatment; to ask that the simple rules of diet be insisted on, and that when these are not sufficiently effective such mechanical factors as glycerin suppositories and paraffin oil be resorted to and that only in extreme cases of acute constipation a cathartic be used."

SELECTIONS

WHOOPING COUGH

By Wilmer Krusen, M.D.
Director of Department of Public Health and Charities, Philadelphia

The records of the Bureau of Health show whooping cough is assuming epidemic proportions throughout the city. More than 400 cases were reported last month and, if the disease continues unabated, indications are this number will be greatly exceeded in January. This infection is one of the most distressing diseases of childhood and causes about 10,000 deaths in this country annually, more than one-half among the infants before their first birthday.

Whooping cough is usually considered lightly and with indifference by the general public. This accounts for the rapid spread of the disease and for the high mortality from a cause which may be prevented. There is a tendency on the part of many parents to treat this disease by home remedies, to allow the children to go about unattended by a doctor and to mingle freely with other children in the neighborhood. A gross injustice is done children who are so neglected, as the infection may be complicated at any time during the course of the disease by pneumonia, which may lead to a fatal termination.

Furthermore, when the parent fails to obtain medical attention the case is not reported to the health department and supervision is left in the hands of inexperienced persons. The infection then spreads rapidly among other children of the household and those living nearby, and soon there is a general infection among the children of that particular neighborhood.

The prevention of the spread of this disease is especially important at this time, when homes cannot be kept comfortably warm because of the severe cold spell and when infants and young children are especially susceptible to the influence of cold weather.

The points to be remembered by parents are to call for the family physician when the child coughs or has a running nose; to obey strictly the quarantine laws when the house is placarded by the bureau of health; to make the patient comfortable during the spasmodic attack of coughing, and to prevent other children from coming into contact with the patient.

Every case of whooping cough should get well. Every death from this disease indicates lack of care or at least ignorance on the part of parents. When conditions at home are not suitable for the proper care of the patient, then arrangements can be made to have the case admitted to the Philadelphia Hospital for Contagious Diseases by making such request to the bureau of health.

"THE BEST IS NONE TOO GOOD FOR HIM"

As a little man was strap-hanging his homeward way he set to puzzling. First there was the conversation he had held that day with a lady diligent in good works. "We're not sending any of the high-class magazines to the trenches," she had remarked. "You know soldiers won't read anything highbrow."

Then a friend had told him about a pamphlet of poems shortly to be published for the men in France. The booklet was to have been made up out of hundreds of lists suggested by busy well-wishers. And these lists had all consisted of army jingles and "uplift" doggerel. "Hm," the friend had proposed. "Why not make your selections out of Palgrave's 'Golden Treasury'?" Send our men the lovliest and the best loved of our poems? The notion had struck the committee as startlingly, perhaps delightfully, original.

On top of that the little man had read in the corner of his evening paper that the poilus were affronted at the low quality and indecency of shows sent from Paris for their entertainment. "Do they think we are pigs?" came their protest.

The little man felt confused. Just what manner of man was the soldier? And what were his wants? Was he really a special kind of human being, run out of one mold, after the fashion of his lead brother in the toyshop? The soldier himself said he didn't fancy the worst, while the diligent ones at home were sure that on no account would he relish the best. There was the friend's suggestion about Palgrave, to be sure. But, then, nobody considered his friend a practical man.

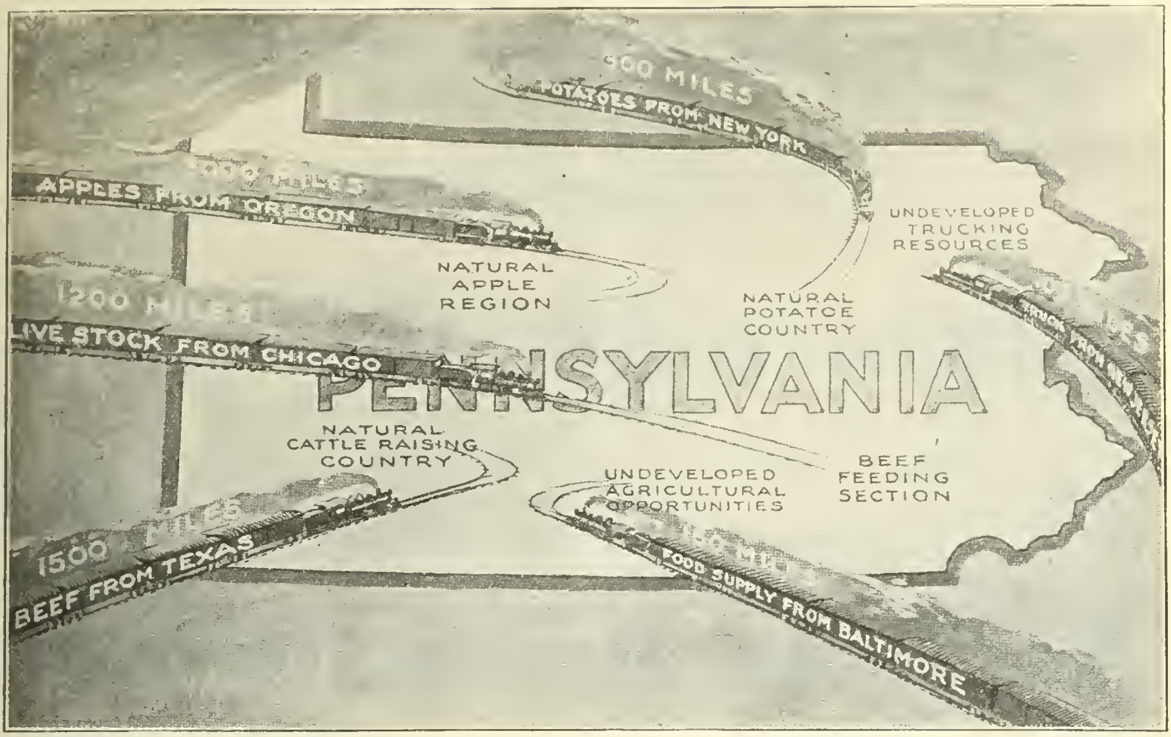
"Now to understand trench psychology . . ." boomed the professory-looking person swaying next him. The little man started. That was just what he yearned to do. There was a service button in the professory person's buttonhole. And the man on the other side in overalls was eavesdropping as if he, too, had a son over there. Then the little man bethought him what the boy he knew best had been like before he was a soldier.

"The soldier—why, he's just your boy and mine; he's everybody's boy. He's every sort of man there is, with every sort of need," he reassured himself. "And I should think that the trench already gave him about enough that isn't first class."

It was then he caught sight of an advertising legend above his head. With immense relief he found the manufacturer of a popular smoke agreeing with him. Or was it that he had secretly been gaining courage to agree with the manufacturer? "Maybe it's cigarettes he wants; maybe it's sonnets," he ventured to himself; "or both. But whatever it is, 'the best is none too good for him.'"—*Collier's*, January 26, 1918.

CONAN DOYLE TURNS SPIRITUALIST

Sir Arthur Conan Doyle, whose name is as familiar in America as in his native land, has recently made an interesting confession of faith—and conversion—in a lecture to the London Spiritualists' Alliance. When he finished his medical education Sir Arthur was a convinced materialist, thought all the evidence was against survival after death, regarded spiritualism as the greatest nonsense. Nevertheless, he was a theist, though he did not believe in an anthropomorphic deity. His present opinions have been reached only after long psychical research, fortified by the views of such great men as Crookes, Wallace and Flammarion. Though spiritualism, Sir Arthur asserted, was still in its "John the Baptist stage," certainly a body of fresh doctrine had already been accumulated, mainly through automatic writing, but partly also from direct voices and other sources, which told of the life of the soul on the other side. This doctrine was fatal to no creed but that of materialism, though Sir Arthur gave it as his opinion that Christianity must change or perish. The new doctrine, he said, taught that the spirit body was analogous to the earth body and that there was a period of oblivion or sleep before the pleasant spirit life was entered on. Hell dropped out, but purgatory was justified. Sir Arthur was much more dogmatic in his statements than his chairman, Sir Oliver Lodge, ventures to be. But when all has been said, what a poor, meager conception of life beyond death spiritualism has given him, compared with the large and rich conception Christianity provides! It has not even got rid of the rigid mental narrowness his early materialism fostered.—Exchange.



A MOVING SCHOOL OF FOOD CONSERVATION

THIS POSTER FROM THE PENNSYLVANIA FOOD TRAIN WAS DRAWN TO SHOW THE COSTLY EXTRAVAGANCE OF HAULING FOOD UNNECESSARILY BACK AND FORTH ACROSS THE COUNTRY. IT APPLIES EVEN MORE PERTINENTLY TO THE PRESENT CONGESTION OF TRAFFIC—COALS TO NEWCASTLE! — WHICH LED THE FEDERAL GOVERNMENT TO TAKE OVER THE RAILROADS.

The above shows one of many ingenious devices brought before the people of Pennsylvania by the Food Supply Committee of that state's Committee of Public Safety to present in a striking and attractive form the principal needs and methods of food conservation. Borrowing from the experience of agricultural colleges and state departments of agriculture, Howard Heinz, chairman of the committee named, secured the cooperation of the Pennsylvania Railroad Company in putting on wheels an exhibit carefully got up for the United States Food Administration by E. G. Routzahn and Mary Swain Routzahn of the Department of Surveys and Exhibits of the Russell Sage Foundation.

The food train was scheduled to reach more particularly the smaller towns and cities; and its arrival was prepared for by an advance agent who obtained the cooperation of the local council of defense. Some fifty thousand people in all saw the exhibit in three months, and these, for the most part, were a selected audience, so that the message indirectly reached a much greater number.

One special advantage of the train exhibit is that every visitor passes along it in a given direction; this makes possible a logical sequence of exhibit and demonstration and a concentration of attention often lost in larger expositions. The counters, along one side of the cars only, were raised thirty-six inches from the floor, and the demonstrators stood a foot higher than the people facing them.

The chief object of the demonstration train was to bring home the contribution to the national task of food conservation which an individual household can make and the importance of this individual contribution. Thus it was shown that if everyone in Pennsylvania saved one ounce of sugar, one ounce of meat, two ounces of wheat flour and one-third ounce of fat daily, then in one week enough food would be saved to supply the draft army of the state (60,859 men) with sugar for seven months, meat for two months and flour for five months, and a large quantity of ammunition containing glycerine manufactured from the fat. This story was depicted with miniature warehouse, army supply-wagon and an encampment representing the war home of the Pennsylvania draft quota.

The car first entered was devoted to canning and drying. One whole car was devoted to instruction in the use of wheat substitutes and the use of saved fats and vegetable fats in place of butter and lard. In all the demonstrations it was assumed that the visitors had a general knowledge of breadmaking, cooking, canning and other processes of food preparation, and that they required visual instruction in the combination of flours and in the details of recipes and methods new to them rather than elementary teaching.—*The Survey*, Jan. 5, 1918.

This Nation's Business Is to Win the War

To This Task the Nation Dedicates Its All

TO THE supremest issue in our nation's life; to the very existence of our country; to the safety of woman and of the prattling baby; to all that men and women hold dear on earth or hope for in Heaven; to human liberty and civilization; to the protection against atheistic barbarism, this nation of one hundred million people dedicates all that it has of active or latent potentialities in moral, physical and financial power.

To this task, which calls for the highest expression of patriotism and heroic manhood and womanhood, we offer all that is in us of men and resources.

We fight against the intrenched powers of darkness and sing; but we fight under the banner of right and with unswerving faith in the leadership of Almighty God.

We shall put away all partisanship. We shall have no personal friendships above duty to the nation. We shall hold rigidly to account every public servant. We shall deal with an iron hand with every man who seeks to rob the nation or its people; with every man who puts profit first and patriotism second. We shall require of our officials the largest supply of guns and munitions, the best in quality as the greatest in quantity, which our limitless resources make possible.

We shall demand aggressive, never-sleeping activity in equipping our army and our navy, with foresightedness and ample preparedness everywhere, to meet every emergency.

We shall never rest until we can know that our soldiers are receiving every advantage and protection, in the camp and on the battlefield, which it is humanly possible for this great nation to give them.

And then, with these problems worked out, with the people of all classes, the rich and the poor, the day laborer and the banker, the manufacturer and the employee, the farmer and the farm hand, fused into one mighty war machine, we shall show to Germany, the accursed; to Germany, which is but another name for Hell; to Germany, the teacher and upholder of murderous warfare upon women and children; to Germany, the international robber and rapist; to Germany, whose very name will forever be a stench in the nostrils of all civilization, that despite its fifty years of preparation it is doomed to destruction, as we join our forces to the Allies and fight for our lives, our honor, our womanhood, and for Christianity itself.

To this heroic, sublime work America marches with absolute assurance that God is still on His throne and all shall be well on earth.—*Manufacturers Record,* Jan. 17, 1918.

THE PENNSYLVANIA MEDICAL JOURNAL

Published Monthly Official Organ of the Medical Society of the State of Pennsylvania

CYRUS LEE STEVENS, A.M., M.D., Editor

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All communications should be addressed to the PENNSYLVANIA MEDICAL JOURNAL, Athens, Pa.
The Medical Society of the State of Pennsylvania does not assume responsibility for any statements or opinions published in this Journal.

ATHENS, PA., FEBRUARY, 1918

"To raise thirteen or fourteen billions of dollars by June, 1918, is a stupendous undertaking, but it is not impossible for America. It is not easy, but it can be done. Our resources are adequate; our will is perfect; our spirit is indominable, and our success is certain. We have only to pull together and we can do the job."—Secretary McAdoo.

MOBILIZING THE PROFESSION FOR WAR

Until the entire medical profession of the United States, or at least those who are mentally and physically fit and within the age limit, are mobilized within the Medical Reserve Corps of the United States Army, not until then can we give to the Surgeon-General that efficiency which he so badly needs in having a large body of medical officers upon whom to draw.

Even though you accept a commission, you may never be called, at the same time your joining the Medical Reserve Corps and placing your services at the command of your country, clearly indicates the patriotism which the medical profession, as a whole, should evince and which we must manifest if we are to win the war.

Every doctor must realize that success depends upon a carefully selected and thoroughly trained body of medical officers. By careful selection, we mean the placing of a medical officer in a position where he is best fitted for the service, and only by having an immense corps or the entire profession mobilized upon a war basis, can we serve our country to the best possible advantage. Every physician coming within the requirements of the service, as to age and physical fitness, should seriously consider this suggestion and not wait for complete mobilization, but apply at once for a commission in the Medical Reserve Corps of the United States Army.

It is not only for the combatant forces that medical officers are required, but for sanitation, hospital camps, cantonments and in other departments where the health and life of the forces are dependent upon the medical officer. We have within the profession a sufficient number of doctors fully to meet the requirements of the Surgeon-General's Office whatever they might be, but to be of service, you must join the Medical Reserve Corps to enable you to meet the appeal which is now being made for a large and efficient Medical Reserve Corps upon which the Surgeon General may draw as requirements demand.

MEMBERSHIP IN COUNTY, STATE AND NATIONAL ORGANIZATIONS

Only those who are members of a county society and, by virtue of such membership, members of the Medical Society of the State of Pennsylvania can become and remain members, and can qualify and continue to be Fellows of the American Medical Association. When membership in the county society lapses the membership in the state society lapses, and membership and Fellowship in the American Medical Association also terminates. One holding a receipt from the American Medical Association for 1918 Fellowship dues and subscription to its journal will continue to receive the journal during 1918 whether he continue his membership in his county society or not, but his Fellowship in the American Medical Association will cease when he is no longer "in good standing" as a member of the organization as he will be on March 28, 1918, unless he has paid his dues to his county society on or before that date and his *per capita* assessment has been forwarded to the state secretary. The secretary of the American Medical Association, however, always calls the attention of a Fellow to the matter before officially dropping his name from the Fellowship list. It is hardly necessary to state that one may be a subscriber to *The Journal of the American Medical Association* without holding membership in either the county, state or national bodies.

Almost every week letters come to the office of the state secretary regarding membership in the county, state or national branches of the organization, which would never have been written if the member had fully appreciated the importance of membership in his county society and if his county secretary had valued aright promptness and accuracy in making reports to the state secretary.

The following correspondence is a sample of letters frequently passing between Chicago and the office of the state secretary:

Chicago, Jan. 3, 1918.

Dr. C. L. Stevens, Secretary,
Medical Society of the State of Pennsylvania,
Athens, Pa.

My Dear Dr. Stevens:

Dr. ———, Pittsburgh, wrote us November 26: "I have just recently become a member of the Allegheny County Medical Society and the Pennsylvania Medical Association." Has Dr. ———'s membership been reported to your office and shall we enter his name on our roster of Pennsylvania members?

In reply to a letter from this office advising him that his name no longer appears on our official roster of Pennsylvania members, Dr. ———, of McKeesport, writes under date of Nov. 10, 1917: "I have in my possession a certificate from the Allegheny County Medical Society, Pennsylvania, dated July 16, *1867*. At a regular meeting of that society held Oct. 13, 1903, by virtue of a special motion, I was exempted from further payment of dues and likewise extended life membership. I am still an affiliate member of this Society." Should Dr. ———'s name be restored to our list of members of the Medical Society of the State of Pennsylvania? According to our records, Dr. ———'s name did not appear in the list of Pennsylvania members as published in the state journal for May, 1917, and when the list of "dropped" names was sent to your office for confirmation and returned to us, Dr. ———'s name was marked "not a member."

In reply to a form letter from this office advising him that he is no longer reported to us as a member, Dr. ———, of North East, Pa., sent us a letter from the secretary of the Erie County Medical Society dated December 3, in which the secretary said: "I find that your duplicate receipt is No. 115, dated April 1, 1917. This letter sent to the A. M. A., should clear matters up." Should Dr. ———'s name be restored to our roster of Pennsylvania members?

Thanking you for assisting us in correcting our membership roster, I am,

Very truly yours,
Alexander R. Craig, Secretary.

Athens, Pa., Jan. 10, 1918.

Alexander R. Craig, M.D., Secretary,
American Medical Association,
535 N. Dearborn St., Chicago.

Dear Doctor:

Your letter of January 3, regarding the membership of Drs. ———, ———, and ——— duly received, and we give below the records of this office.

Dr. ———, Pittsburgh, became a member of this society in 1915 and resigned in 1916. He has not since been reported as a member.

Dr. ———, McKeesport, was in 1916 reported as exempt from the payment of dues to the Allegheny County Medical Society by reason of continuous membership, and his *per capita* assessment was paid by that society. His name was not included, however, in the list of members exempt for 1917. No *per capita* assessment having been forwarded for him, his name was dropped in the spring of 1917, after Dr. ———'s attention had been called to the matter. Article V, Section 3, of the Constitution of the Allegheny County Medical Society provides that "any member who has paid dues for twenty-five years may on application be exempt from further payment."

Receipt No. 115 of the Erie County Medical Society for 1917 was given to Dr. ——— of North East, and was received in this office, together with the *per capita* assessment, on April 7, 1917. The galley proof of the list of members of the Erie County Medical Society published in May, 1917 Journal, was mailed the secretary on May 1, and returned on May 5. Opposite the name of Dr. ——— was written the one word "omit" without any other comment. His name was therefore omitted from the roll of members.

Hoping that all of the above-mentioned physicians will soon be able to read their title clear to membership throughout the organization, I remain,

Faithfully yours,
C. L. Stevens, Secretary.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION

There was a meeting of the Committee on Public Policy and Legislation in Philadelphia on January 12, with three of the five members present. There were present with the committee by invitation, President-elect Van Sickle, four of the five members of the Advisory Committee to the Committee on Public Policy and Legislation recently appointed by President Dixon, and at least one member of each of the subsidiary committees, namely, Committee on Defense of Medical Research, Committee on Promotion of Efficient Laws on Insanity, Commission on Conservation of Vision, and the Commission on Medical Expert Testimony. Those present acted as a committee of the whole in the transaction of business.

It was decided (1) that the chairman of the Committee on Public Policy and Legislation of each county society be an associate member of the Committee on Public Policy and Legislation; (2) that the advisory committee be authorized to perform the duties as prescribed by the resolutions "to organize the county society committees on public policy and legislation for the purpose of collecting evidence of illegal practice," etc., introduced in the House of Delegates at Pittsburgh, and report to the Committee on Public Policy and Legislation; (3) the appointment of a subcommittee to confer with the State Commission for the Study of Industrial Insurance; (4) that the committee continue to cooperate with the Legislative Conference of the Medical Profession of Pennsylvania, organized last year.

The following recommendations were adopted and referred to the Committee on Revision of the Constitution and By-Laws and also to the House of Delegates: (1) That an office of Executive Secretary of the state society be created; (2) that the annual *per capita* assessment of the state society be increased by one dollar, and that as much of the increased income as may be necessary be devoted to the salary and expenses of the Executive Secretary.

PROGRAM, PHILADELPHIA SESSION

The Sixty-Eighth Annual Session of the Medical Society of the State of Pennsylvania will be held in the Bellevue-Stratford Hotel, Philadelphia, Sept. 23-26, 1918. The Committee on Scientific Work met in Philadelphia, January 12, with all the members present excepting President Dixon and the chairman of one section. An excellent program was outlined and the members of the committee have already begun their work. There will be three general meetings as usual, and three half-day meetings of each of the four sections: Medicine; Surgery; Pediatrics, and Eye, Ear, Nose and Throat Diseases. Members are requested to volunteer papers and to send title of same before April 1, to the chairman of the committee, Dr. Oskar Klotz, 4720 Wallingford Street, Pittsburgh, or to the respective section officers, names and addresses of whom will be found on advertising page vi of each issue of The Journal. Officers of county societies are requested to urge their members to volunteer papers, so that each county may be represented on the program. It will be an honor to be on the Philadelphia program, but papers proffered after the second meeting of the committee early in the spring in all probability cannot be accepted. Each year offers of interesting papers have been handed in after the program was filled up.

OUR COUNTRY FIRST OF ALL

We are going to do our best by Our Country, yielding our lives if need be. We are going to forget all profiteering, all selfishness, all professional jealousy, all narrowness; and we are going to buckle right down to the practice of medicine, surgery and sanitation in the same broad-minded way the Men Over There did, whether we serve Our Country abroad or at home. We are going to remember that medicine has been made over new in the last twenty years, and that we are of little use as physicians unless WE have been made over new during that time or are willing to work desperately hard *NOW* to catch up if we have dropped behind.

We are going to study, at least two hours every day, the best of books and journals—real ones that have to do with *actual medicine as it is today*. We won't have any time to spend on medical chit-chat, punk old controversies that ought to have been buried long ago, and the half-cooked, semi-commercial class of literature of which we have been having altogether too much. We are going to visit the hospitals and medical societies all we can, learning modern method; and we are going to forget about the fusses in medical circles aimed to discredit the medical societies and divide the physicians into classes. These things we MUST do in 1918.

Above all, we are going to remember that Our Country and Our Allies are involved in a tremendous war with an Unscrupulous Thing that must be overcome, and it is up to every man of us to help do it. If we don't, God help Civilization and Medicine!

Doctor, what are YOU going to do?

—Editorial, the *Medical Council*, January, 1918.

ACCIDENTS FROM LOCAL ANESTHETICS

Forewarned is to be forarmed, and for this reason accidents, both therapeutic and surgical, should be reported. It is doubtful if all the accidents and untoward effects occurring during and after the use of local anesthetics are reported, but such cases serve as warning signs for the profession and should, therefore, be reported. It is self-evident that the prevention and treatment of such accidents must be based on full and conscientious reports of all abnormalities. Elsewhere in this issue will be found a communication from the Committee on Therapeutic Research of the Council on Pharmacy and Chemistry of the American Medical Association, requesting the reporting of all accidents from local anesthetics.

COUNTY SOCIETY HONOR ROLL

The following societies have forwarded 1918 receipts for at least 60 per cent. of their 1917 membership. The figures indicate the percentage of membership paid.

Greene County	95 per cent.
Union County	94 per cent.
Wyoming County	81 per cent.
Juniata County	73 per cent.
Sullivan County	70 per cent.
Wayne County	61 per cent.
Somerset County	60 per cent.

The Honor Roll for March will consist of those societies that have forwarded 1918 receipts for as many members as they had in 1917.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported up to January 21:

ALLEGHENY COUNTY: *Removals.*—Otto C. Hagmeier from Reinholds (Lancaster County) to Seaside, Oregon; John J. Kolski from Donora (Washington County) to 212 Ninth St., Braddock.

ARMSTRONG COUNTY: *New Member.*—Henry B. Stone, Kittanning.

BEAVER COUNTY: *New Member.*—William S. Shields, Koppel.

BUCKS COUNTY: *Removal.*—Milton E. Weaver from Perkasie to 511 South Sixth St., Allentown (Lehigh County).

BUTLER COUNTY: *Death.*—Albert Holman (Jefferson Med. Coll., '81) in Butler, December 13, from cerebral hemorrhage, aged 64.

CARBON COUNTY: *New Member.*—John J. McDonald, Nesquehoning (by transfer from Clearfield County Society). *Death.*—John W. Luther (Univ. of Pennsylvania, '99) of Palmerton, in Jacksonville, Fla., December 28, from pneumonia, aged 42.

CENTER COUNTY: *Transfer.*—Lewis E. Wolfe, to Union County Society.

CLEARFIELD COUNTY: *New Members.*—Jonathan Currier, Grampian; Hiram O. King, Curwensville. *Transfer.*—John J. McDonald to Carbon County Society. *Removal.*—Fred C. Howe from Munson to 307 Market St., Clearfield.

COLUMBIA COUNTY: *New Members.*—Harry S. Buckingham, Berwick (by transfer from Philadelphia County Society); Edward Everett, Millville (by transfer from Lycoming County Society).

CRAWFORD COUNTY: *New Member.*—Harry C. Winslow, Meadville (by transfer from McKean County Society).

CUMBERLAND COUNTY: *Removal.*—Jacob C. Kisner from Carlisle to Clayton, N. M.

DAUPHIN COUNTY: *New Member.*—Abraham L. Shope, Penbrook. *Death.*—Harry P. Eisenhart (Jefferson Med. Coll., '06) in Harrisburg, December 28, from acute laryngitis, aged 47.

DELAWARE COUNTY: *New Member.*—Charles E. Felderman, Chester. *Removal.*—Frances Weidner from Philadelphia to 5400 Howe St., Pittsburgh.

ERIE COUNTY: *New Member.*—A. G. Davis, Erie.

FAYETTE COUNTY: *New Members.*—Daniel A. Chapman, Republic; W. B. Crawford, Brownsville; John F. Detweiler, Uniontown.

FRANKLIN COUNTY: *New Members.*—Ella M. Russell, Helen M. Stewart, Chambersburg (by transfer from Philadelphia County Society).

JEFFERSON COUNTY: *Removal.*—John W. Ferman from Luthersburg (Clearfield County) to Charleroi Bank Bldg., Charleroi (Washington County).

LAWRENCE COUNTY: *New Members.*—Herman D. Boyles, James K. Pollock, New Castle; Henry E. Helling, Ellwood City. *Death.*—Frederick M. Wagner (Jefferson Med. Coll., '06) of Wampum, was instantly killed by a railroad train January 3, aged 38.

LYCOMING COUNTY: *New Member.*—J. Harrison Fisher, Williamsport. *Transfer.*—Edward Everett to the Columbia County Society. *Death*—Howard M.

Essick (New York Univ. Med. Coll., '81) in Sunbury, January 12.

McKean County: *Transfer.*—Harry C. Winslow to Crawford County Society.

Mercer County: *Deaths.*—James B. Livingston (Western Reserve Univ., School of Med., Cleveland, '56) in West Middlesex, October 19, aged 88; David J. Washabaugh (Miami Med. Coll., Cincinnati, '76) in Grove City, December 28, from a paralytic stroke which he suffered six weeks before, aged 72.

Montgomery County: *New Member.*—W. Stuart Watson, Norristown.

Northampton County: *Deaths.*—Thomas A. Carroll (Baltimore Med. Coll., '04) in Wind Gap, December 5, aged 36; Abraham Stout (Univ. of Pennsylvania, '55) in Bethlehem, January 9, aged 78.

Philadelphia County: *Transfers.*—Harry S. Buckingham to Columbia County Society; Ella M. Russell, Helen M. Stewart to Franklin County Society. *Deaths.*—Archibald A. Howell (Univ. of Pennsylvania, '08) in Philadelphia, January 15, from a complication of diseases following an attack of grip, aged 36; John S. Pearson (Univ. of Pennsylvania, '77) in Philadelphia, January 5, aged 64. *Removal.*—Annie Young from Philadelphia to Hamburg (Berks County).

Schuylkill County: *Removal.*—John G. Striegel from Pottsville to 1432 McCullott St., Baltimore, Md.

Tioga County: *New Member.*—Arthur M. Greenfield, Westfield. *Removal.*—Burt R. Phillips from Elkland to Libby, Mont.

Union County: *New Member.*—Lewis E. Wolfe, New Berlin (by transfer from Center County Society).

Warren County: *New Member.*—Clayton C. Flatt, Corydon.

PAYMENT OF PER CAPITA ASSESSMENT

The *per capita* assessment for the year 1917 has been received from component county societies since December 24, as acknowledged on page 261 of the January Journal, as follows:

Dec. 31,	Erie	116	6907	$2.75
	Warren	44	6908	2.75
1918				
Jan. 3,	Fayette	123	6909	2.75
Jan. 10,	Lycoming	104	6910	2.75
Jan. 15,	Lawrence	57–59	6911–6913	8.25

The *per capita* assessment for the year 1918 has been received from component county societies since December 28, as acknowledged on page 261 of the January Journal as follows:

1918				
Jan. 2,	Blair	23–28	203–208	$16.50
	Bucks	41–45	209–213	13.75
Jan. 3,	Northumberland	8–15	214–221	22.00
Jan. 4,	Juniata	2–6	222–226	13.75
Jan. 5,	Crawford	7, 14, 15, 18	227–230	11.00
	Crawford	8–13, 16, 17*	231–238	
Jan. 7,	Lawrence	4–16	239–251	36.75
	Greene	1–17	252–268	46.75
	Beaver	5–6	269–270	5.50
	Clinton	1–2	271–272	5.50
	Juniata	7	273	2.75
	Wyoming	11	274	2.75
	Mifflin	1, 3–14	275–287	35.75
	Mifflin	2*	288	
Jan. 9,	Greene	18	289	2.75
	Union	1–12	290–301	33.00
	Montgomery	8–20	302–314	35.75
	Montgomery	21–34*	315–328	
Jan. 10,	Mifflin	15	329	2.75
	Wayne	17	330	2.75
	York	1–44	331–374	121.00
	York	45–55*	375–385	
Jan. 11,	Monroe	1–2	386–387	5.50
	Northampton	19*	388	
	Northampton	20	389	2.75
	Franklin	8–12	390–394	13.75
	Lebanon	1–8	395–402	22.00
Jan. 12,	Armstrong	1–28	403–430	77.00
Jan. 13,	Mifflin	16	431	2.75
	Columbia	17–20	432–435	11.00
	Columbia	16, 21–24*	436–440	
	Fayette	1–5, 23–43	441–466	71.50
	Fayette	6–22, 44–47*	467–487	
Jan. 14,	Greene	19	488	2.75
Jan. 15,	Beaver	7–21	489–503	41.25
Jan. 16,	Adams	8–13	504–509	16.50
Jan. 17,	Montgomery	35–59	510–534	68.75
	Luzerne	2–14	535–547	35.75
	Mercer	1–5*	548–552	
	Mercer	6–25	553–572	55.00
	Clearfield	1–5, 13, 15–32	573–596	66.00
	Clearfield	6–12, 14*	597–604	
Jan. 18,	York	56–62	605–611	19.25
	Cumberland	1, 6–20	612–627	44.00
	Cumberland	2–5*	628–631	
Jan. 19,	Columbia	25	632	2.75
	Lycoming	3–34, 42–43	633–666	93.50
	Lycoming	35–41*	667–673	
Jan. 21,	Somerset	9–18	674–683	27.50
	Somerset	19–20*	684–685	
	Tioga	11	686	2.75
	Dauphin	1–44	687–730	121.00
	Bradford	15–20	731–736	16.50
Jan. 22,	Juniata	8	737	2.75
Jan. 24,	Franklin	13–16	738–741	11.00
	Montgomery	60–70	742–752	30.25
	Montgomery	72–73*	753–754	
	Cambria	1–16	755–770	44.00
Jan. 26,	Luzerne	15–20	771–776	16.50
	Clinton	3–6	777–780	11.00
	Armstrong	29–32*	781–784	
	Armstrong	33–34	785–786	5.50
Jan. 29,	Sullivan	1–7	787–793	19.25
	Blair	29–36	794–801	22.00
	Cumberland	21–25	802–806	13.75
	Clinton	7–14	807–814	22.00
Jan. 30,	Wyoming	12–13*	815–816	
	Adams	14	817	2.75
	Union	13–16	818–821	11.00
	Bedford	1–3	822–824	8.25
	Luzerne	21–57, 59–60	825–863	107.25
	Berks	1–40	864–903	110.00
	Berks	41–50*	904–913	
Jan. 31,	Wayne	18–20	914–916	8.25
Feb. 1,	Montgomery	71, 74–79	917–923	19.25
	Somerset	21–25	924–928	13.75

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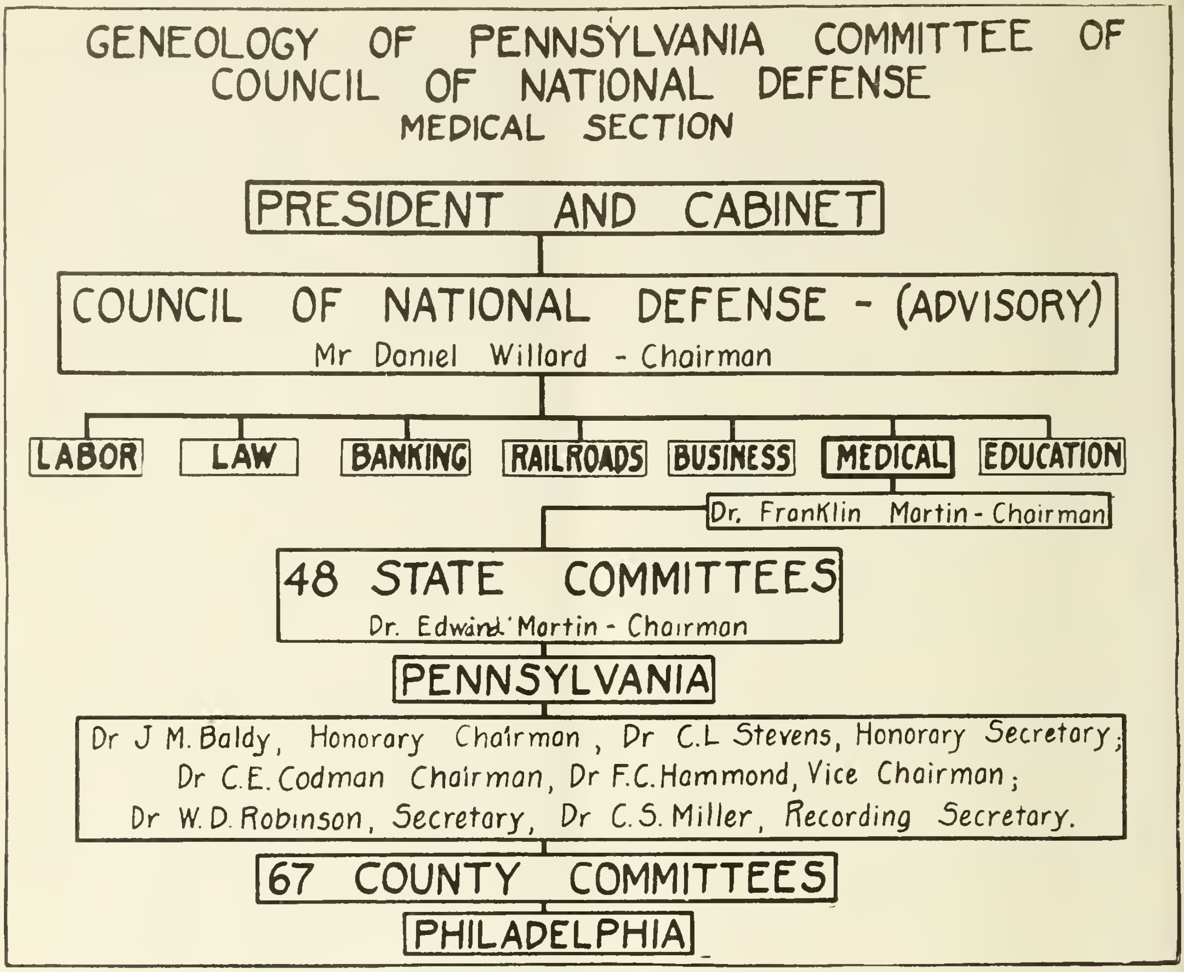
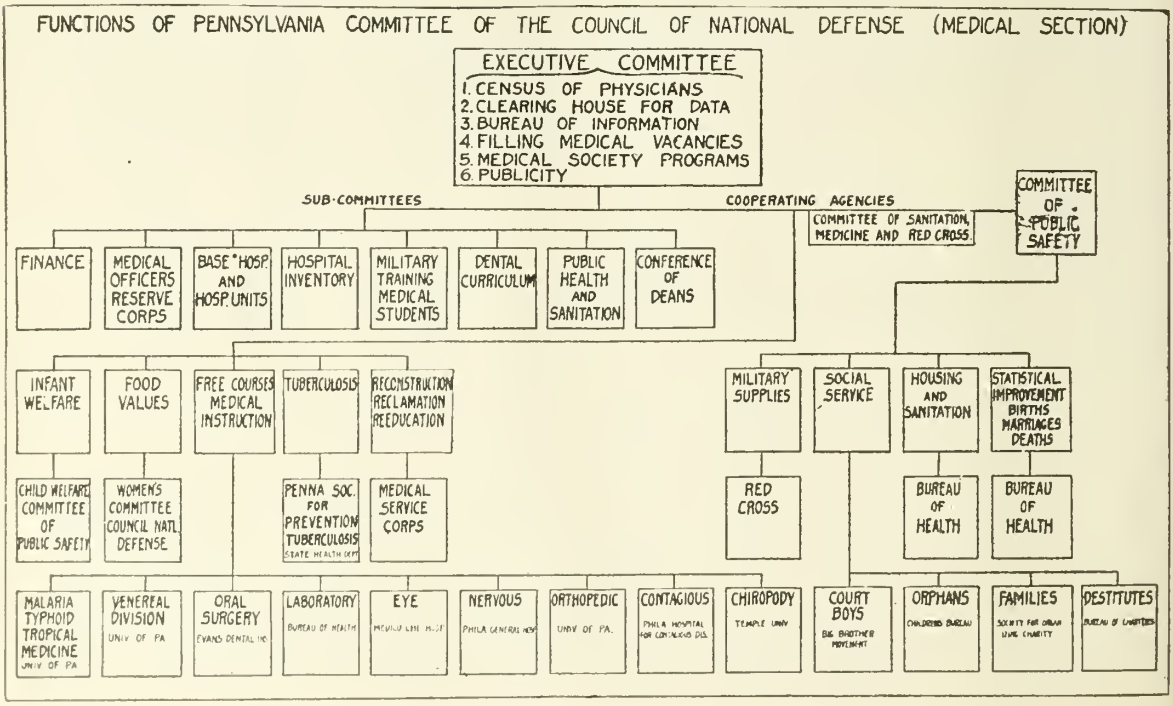
* Dues remitted.

FRUIT JUICES

For their dietetic value and refreshing qualities fruit juices, especially orange juice and grape juice, enjoy a wide-spread and growing popularity as agreeable beverages. A glassful of grape juice measuring 7 ounces (210 c.c.) will furnish about 200 calories in the form of sugar; orange juice is about half as rich in food value. Recent analyses indicate that the juice of the loganberry contains from 6 to 8 per cent. of sugar which means a fuel value of approximately 300 calories to the liter.—*Jour. A. M. A.*


GENEOLOGY OF PENNSYLVANIA COMMITTEE OF COUNCIL OF NATIONAL DEFENSE
MEDICAL SECTION
PRESIDENT AND CABINET
COUNCIL OF NATIONAL DEFENSE - (ADVISORY)
Mr Daniel Willard - Chairman
LABOR
LAW
BANKING
RAILROADS
BUSINESS
MEDICAL
EDUCATION
Dr. Franklin Martin - Chairman
48 STATE COMMITTEES
Dr. Edward Martin - Chairman
PENNSYLVANIA
Dr J M. Baldy, Honorary Chairman, Dr C.L Stevens, Honorary Secretary;
Dr C.E. Codman Chairman, Dr F.C. Hammond, Vice Chairman;
Dr W. D. Robinson, Secretary, Dr C.S. Miller, Recording Secretary.
67 COUNTY COMMITTEES
PHILADELPHIA


FUNCTIONS OF PENNSYLVANIA COMMITTEE OF THE COUNCIL OF NATIONAL DEFENSE (MEDICAL SECTION)
EXECUTIVE COMMITTEE
1. CENSUS OF PHYSICIANS
2. CLEARING HOUSE FOR DATA
3. BUREAU OF INFORMATION
4. FILLING MEDICAL VACANCIES
5. MEDICAL SOCIETY PROGRAMS
6. PUBLICITY
SUB-COMMITTEES
COOPERATING AGENCIES
COMMITTEE OF SANITATION, MEDICINE AND RED CROSS
COMMITTEE OF PUBLIC SAFETY
FINANCE
MEDICAL OFFICERS RESERVE CORPS
BASE HOSP. AND HOSP. UNITS
HOSPITAL INVENTORY
MILITARY TRAINING MEDICAL STUDENTS
DENTAL CURRICULUM
PUBLIC HEALTH AND SANITATION
CONFERENCE OF DEANS
INFANT WELFARE
FOOD VALUES
FREE COURSES MEDICAL INSTRUCTION
TUBERCULOSIS
RECONSTRUCTION RECLAMATION REEDUCATION
MILITARY SUPPLIES
SOCIAL SERVICE
HOUSING AND SANITATION
STATISTICAL IMPROVEMENT BIRTHS MARRIAGES DEATHS
CHILD WELFARE COMMITTEE OF PUBLIC SAFETY
WOMEN'S COMMITTEE COUNCIL NATL. DEFENSE
PENNA SOC. FOR PREVENTION TUBERCULOSIS STATE HEALTH DEPT
MEDICAL SERVICE CORPS
RED CROSS
BUREAU OF HEALTH
BUREAU OF HEALTH
MALARIA TYPHOID TROPICAL MEDICINE UNIV OF PA
VENEREAL DIVISION UNIV OF PA
ORAL SURGERY EVANS DENTAL INS
LABORATORY BUREAU OF HEALTH
EYE MEDICO CHI. HOSP
NERVOUS PHILA GENERAL HOSP
ORTHOPEDIC UNIV OF PA.
CONTAGIOUS PHILA HOSPITAL FOR CONTAGIOUS DIS.
CHIROPODY TEMPLE UNIV
COURT BOYS BIG BROTHER MOVEMENT
ORPHANS CHILDRENS BUREAU
FAMILIES SOCIETY FOR ORGANIZING CHARITY
DESTITUTES BUREAU OF CHARITIES

MEDICINE AND THE WAR

Pennsylvania Committee of the Council of National Defense

The foregoing chart gives the functions of the Pennsylvania State Committee of the Council of National Defense, Medical Section. The first function of the Executive Committee, namely, Census of Physicians, means the collecting and tabulating of data relative to every physician in the state of Pennsylvania.

The bureau of information is endeavoring to refer the proper physicians to vacancies in hospitals, institutions, etc., where the regular staffs have been depleted of physicians, who have been called into active service.

The state committee has eight subcommittees, the names of which explain the work of the committees. The Executive Committee, in conjunction with the Subcommittee on Base Hospitals and Hospital Units, is trying in all ways possible to make pleasant the stay in this city of the personnel of base hospitals as well as giving them any information relative to medical meetings, etc.

The central office has been in touch with the following agencies who have promised to cooperate along various lines: Committee of Public Safety Child Welfare Committee has promised to help along infant welfare lines. Free courses in medical instruction for members of the Medical Reserve Corps detailed by the Surgeons-General of the Army, Navy or Public Health Service to this work will be given in tropical medicine, venereal diseases, laboratory, ophthalmology, contagious diseases and chiropody. Courses in oral surgery, nervous diseases and orthopedics have been established, as well as courses in brain surgery and fractures. The Pennsylvania Society for the Prevention of Tuberculosis has promised to help along the line of cases of tuberculosis referred to them. The central committee is also encouraging reconstructive work for rejected men and aiding projects for the reeducation of maimed soldiers, working through the Medical Service Corps.

Major Charles A. E. Codman,
Chairman.
Charles Scott Miller, M.D.,
Recording Secretary.

General Office: Room 515, City Hall, Philadelphia.

HONOR ROLL OF PENNSYLVANIA PHYSICIANS

The following is a list of Pennsylvania physicians who up to Dec. 16, 1917, have been recommended for Commission in the Medical Officers Reserve Corps. This list does not include the many patriotic physicians who have applied for commission and have been declined for physical reasons or on account of age. Those marked with a star hold the rank of Major; those marked with a dagger are Captains; all others are First Lieutenants. The Journal will appreciate notice of any errors.

ADAMS COUNTY

*Thompson M. Baird, Gettysburg
†Richard Bow, Gettysburg
†Lawrence Rosboro Craig, Gettysburg
†Clyde Leslie Curll, Gettysburg
†Charles Henry Hecker, Gettysburg
†Clinton Austin Kane, Gettysburg
Horace Wilford Kohler, Littlestown
Edgar Allen Miller, East Berlin
*Luke B. Peck, Gettysburg
Robert Dubs Swab, Hampton
*Readding Lloyd Williams, Gettysburg

ALLEGHENY COUNTY

Samuel Herbert Adams, Pittsburgh
Isaac Hope Alexander, Pittsburgh
John Harrison Alexander, Pittsburgh
*Thomas Shaw Arbuthnot, Pittsburgh
Russell B. Armor, Crafton
Ernest John Aten, Pittsburgh
Milton Homer Bachman, McKeesport
Harry Leonard Baer, Pittsburgh
Frank Raymond Bailey, Pittsburgh
Joseph Armstrong Baird, Pittsburgh
Moses Haven Baker, Pittsburgh
*Wm. Piper Barndollar, Pittsburgh
Charles Joseph Barone, Pittsburgh
Thomas McSwiney Barrett, Dixmont
Ferdinand Landilin Benz, Pittsburgh
Carl Franklin Bigoney, Pittsburgh
Lewis Clyde Bixler, Pittsburgh
Clarence Frank Bernatz, Braddock
James D. Blevins, Pittsburgh
David Alexander Boggs, Pittsburgh
Marion Starr Bowers, Braddock
*John Welch Boyce, Pittsburgh
†David Hartin Boyd, Pittsburgh
John Dean Boylan, Wilkinsburg
Claude Lee Bradford, Pittsburgh
Mark Averill Bradford, Pittsburgh
Noss Dean Brant, Pittsburgh
Charles Raymond Brenner, Pittsburgh
Robert Bahner Brown, Pittsburgh
Sloan Alexander Brown, Coraopolis
Edwin Porter Buchanan, Pittsburgh
Clarence John Buck, Pittsburgh
Clarence J. Buckley, Pittsburgh
Alfred J. Buka, Pittsburgh
†Wallace Bulford, Pittsburgh
William T. Burleigh, Pittsburgh
James Clark Burt, Pittsburgh
Alexander Hunter Caldwell, Pittsburgh
*Bert W. Caldwell, Pittsburgh
John Charles Calhoun, Pittsburgh
Donald W. Cameron, Pittsburgh
John Notley Camp, Pittsburgh
Frank Dixson Campbell, Pittsburgh
Robert John Campbell, Pittsburgh
Bender Zelotes Cashman, Pittsburgh
Edgar Thomas Chatham, Pittsburgh
Edward Perry Clark, Pittsburgh
Harry Grover Clarke, Bridgeville
†Joseph Julius Clarke, Pittsburgh
Moses Clayborne, Pittsburgh
Robert Miller Cochrane, Pittsburgh
Amos Watson Colcord, Clairton
Joseph H. Collins, Pittsburgh
Austin Lynch Cort, Wilson
Robert William Cotton, McKees Rocks
Thomas Irving Cotton, Carnegie
George Smith Cunningham, Pittsburgh
Clyde Leslie Curll, Pittsburgh
Robert Edward Davison, Pittsburgh
*Walter Alfred Dearth, Pittsburgh
James John Dickinson, Pittsburgh
William Paul Dodds, Pittsburgh
Walter Foster Donaldson, Pittsburgh
*Bradley Dovey, Pittsburgh
†Bertram Foster Duckwell, Aspinwall
Alfred Wm. Duff, Pittsburgh
Homer Graham Duncan, Braddock
George C. Dunham, Pittsburgh
Andrew Peter D'zmura, Pittsburgh
†Samuel Isaac Eber, Pittsburgh
Joseph Calvin Edgar, Oakmont
Thomas Perrine Edmundson, Pittsburgh
*James F. Edwards, Pittsburgh
Augustus Hartje Eggers, Pittsburgh
†Charles G. Eicher, McKees Rocks
Cortland W. Elkin, Pittsburgh
Jacob Wm. E. Ellenberger, Wilkinsburg
Edward Ellis Evans, McKeesport
James North Evans, Pittsburgh
Russell Morrison Evans, Pittsburgh
†Sydney Kinsman Fenollosa, Pittsburgh
Samuel Firestone, Jr., McKeesport
Abraham Finkelpearl, Pittsburgh
Eben Winslow Fiske, Pittsburgh
Lawrence Henry Fitzgerald, Pittsburgh
Henry Clement Flood, Pittsburgh
†Austin C. Frank, Pittsburgh
Agnew Fritz Frankhauser, Pittsburgh
Daniel Francis Frederick, Pittsburgh
John Washington Fredette, Pittsburgh
†James Roy Freeland, Pittsburgh
John Walter Frey, Avalon
Morris Frishman, Pittsburgh
Raymond Joseph Frodey, Pittsburgh
Daniel Wadsworth Frye, Pittsburgh
Brown Fulton, Pittsburgh
Shaul George, Pittsburgh
George Wilbur Getze, Tarentum
Henry James Giles, Pittsburgh
James Lee Gilmore, Pittsburgh
Joseph Brant Gold, Pittsburgh
Samuel Goldberg, McKeesport
Louis J. Goldblatt, McKeesport
John Francis Golden, Dormont
Hubert J. Goodrich, McKees Rocks
Norman Robert Graham, Sharpsburg
Edward Graver, Pittsburgh
Thomas Wray Grayson, Pittsburgh
William Harvey Guy, Pittsburgh
Henry Martyn Hall, Jr., Pittsburgh
Edward Everett Hamer, Pittsburgh
Samuel Hamilton, Jr., Pittsburgh
William Card Harmount, Pittsburgh
Fred Blanchard Harrington, Pittsburgh
Geo. Randolph Harris, Jr., Pittsburgh
Fred Hazard Harrison, Pittsburgh
Clifford Clinton Hartman, Pittsburgh
†Frederick Abraham Hartung, Pittsburgh
Walter B. Harvey, Pittsburgh
†John A. Hawkins, Pittsburgh
*James Delevan Heard, Pittsburgh
Howard Harrington Heilman, Pittsburgh
†William Christian Heisey, McKeesport
Charles Edward Herman, Carnegie
William Ban Hetzel, Pittsburgh
Robert Charles Hibbs, Pittsburgh
Abram Vernon Hicks, Pittsburgh
Ralph Lee Hill, Woodville
Paul C. L. Hoch, Curtisville
Stanley Hall Holland, Frank
Allen Richmond Howard, Pittsburgh
John Huey Humes, McKees Rocks
Samuel Itscoitz, McKeesport
†Daniel Fabian Jackson, Pittsburgh
Elmer C. Jackson, Pittsburgh
Frederick Murray Jacob, Pittsburgh
Russell R. Jones, Pittsburgh
*George Coffin Johnston, Pittsburgh
†Robert Clarence Johnston, Springdale
Milton Boyd Katzenstein, Pittsburgh
David D. Kennedy, Pittsburgh

Herbert Francis Kenny, Pittsburgh
Russell Henry King, Pittsburgh
*Samuel Victor King, Pittsburgh
Austin Flint Klutz, Pittsburgh
Donald Reed Kunkelman, Pittsburgh
George Rufus Lacy, South Hills
Stephen Shaeffer Landis, Duquesne
Lyndon Holt Landon, Pittsburgh
Cyril Francis Lauer, Pittsburgh
Francis Victor Laurent, Pittsburgh
William Harrison Leffler, McKeesport
Edward Clyde Leslie, Pittsburgh
Simon Ashe Levey, Pittsburgh
Frederick Victor Lichtenfels, Pittsburgh
James A. Lindsay, Pittsburgh
John Marshall Lipscomb, Pittsburgh
*Lawrence Litchfield, Pittsburgh
Herbert Milton Long, Pittsburgh
David Boyd Ludwig, Pitcairn
Clarence Wilbur Lurting, Pittsburgh
Samuel Benson Lyons, Pittsburgh
†Edward Joseph McCague, Pittsburgh
Michael Joseph McCarthy, Pittsburgh
Samuel Thomas McCate, Pittsburgh
Henry E. McClenahan, Pittsburgh
†Frank L. McCready, Sewickley
John Paul McComb, Bellevue
William J. McConnell, Pittsburgh
Frank White McCorkle, Pittsburgh
Bernard John McCormick, Pittsburgh
David Coyle McCulloch, Pittsburgh
David Pollock McCune, Jr., McKeesport
Joseph Leo McGinley, Pittsburgh
William John McGregor, Wilkinsburg
Hugh Edward McGuire, Pittsburgh
†James Morgan McNall, Wilkinsburg
Archibald A. MacLachlan, Pittsburgh
Charles Buckley Maits, Pittsburgh
Richard Smart Major, Pittsburgh
John William Mann, Pittsburgh
George Mantingh, Pittsburgh
Charles Howard Marcy, Pittsburgh
William Ody Markell, Pittsburgh
John Laughlan Martin, Pittsburgh
William Joline Martin, Wilkinsburg
Harry Oliver Mateer, Pittsburgh
Franklin Wayne Mathewson, Oakdale
Edward Jewitt Meley, Turtle Creek
Evan William Meredith, Pittsburgh
Laird O'Neil Miller, Pittsburgh
*Robert Talbott Miller, Pittsburgh
Walter Arthur Monnich, Pittsburgh
Charles Core Moore, Pittsburgh
John Ralph Morgan, Pittsburgh
†Alanson F. B. Morris, Pittsburgh
Charles Elmer Mullin, Pittsburgh
James Alexius Munster, Pittsburgh
Harry Lavelle Murphy, Pittsburgh
Howard Samuel Myers, Pittsburgh
Thomas Gibbons Nelan, Pittsburgh
DeWitt Baldwin Nettleton, Sewickley
John Edward Newhouse, Pittsburgh
Scott Allan Norris, Homestead
Norman Charles Ochsenhirt, Pittsburgh
Edward Y. Ord, McKeesport
Charles Sumner Orris, Tarentum
Claude Weston Page, Pittsburgh
William Theodore Palchanis, Pittsburgh
Chauncey Luck Palmer, Pittsburgh
Benjamin Howard Patterson, Pittsburgh
Fred Lyle Patterson, Imperial
Samuel Bemis Pearce, Pittsburgh
Ruben Harry Pearlman, Pittsburgh
†Howard Henry Permar, Pittsburgh
*James K. M. Perrine, Pittsburgh
Ward Irving Pierce, Pittsburgh
Edward Alexander Pitcairn, Wilkinsburg
Harry Oliver Polack, Wilmerding
Fabian Lee Pratt, Pittsburgh
†Henry Thompson Price, Pittsburgh
†Frederick Proescher, Pittsburgh
William Thomas Pyle, Swissvale
†William Burton Getty Ray, Pittsburgh
Maurice Snowden Redmond, Pittsburgh
Fred Dawson Reynolds, Pittsburgh
DeWayne Greenwood Richey, Pittsburgh
Thomas Sheldon Ricks, Braddock
†Stanley Marshall Rinehart, Pittsburgh
James William Robinson, Pittsburgh
†Ralph Vincent Robinson, Pittsburgh
Wilton H. Robinson, Pittsburgh
Harry Lincoln Rogers, Pittsburgh
Floyd Troutman Romberger, Elizabeth
Frank C. Rote, Pittsburgh
Ivo Ernest Rowland, Elizabeth
Myron Parkhill Rudolph, Pittsburgh
Ralph Leyda Rutledge, McKeesport
Dennis Eugene Saabo, Duquesne
Frederick Scott Salisbury, Pittsburgh
Clyde Wilford Sample, Wilkinsburg
*Howard G. Schleiter, Pittsburgh
Henri Schmid, Pittsburgh
Walter William Schmidt, Crafton
Charles Scofield, Bakerstown
Simon Seegman, Pittsburgh
Charles Krauth Shanor, Sewickley
Byron Earl Shaw, Pittsburgh
†Joseph Bernard Shea, Pittsburgh
Nicholas G. L. Shillito, Pittsburgh
George G. Shoemaker, Pittsburgh
Chester S. Sierakowski, McKees Rocks
†Paul Rothrock Sieber, Pittsburgh
*David Silver, Pittsburgh
*Frank F. Simpson, Pittsburgh
†John Reid Simpson, Pittsburgh
Karl Stanley Simpson, Pittsburgh
Spencer Percival Simpson, Pittsburgh
Sumner Cleland Simpson, Pittsburgh
†Roy Ezra Sleppy, Pittsburgh
Morris Abel Slocum, Aetna
Henry MacVicker Smith, Pittsburgh
†Stanley Sinclair Smith, Pittsburgh
Roy Ross Snowden, Pittsburgh
Thomas Henry Snowwhite, Braddock
John Joseph Sosnowski, Pittsburgh
Marcus Spiro, Pittsburgh
Thomas Mervyn Stahlman, Pittsburgh
Paul Beadle Steell, Pittsburgh
John Logan Steffy, Pittsburgh
†Harold Wentworth Stevens, Pittsburgh
William John Stewart, Pittsburgh
Carroll Semens Thompson, Pittsburgh
Paul Titus, Pittsburgh
Harry Joseph Treshler, Pittsburgh
Eugene John Truschel, Pittsburgh
Carl William Truter, Pittsburgh
†Charles William Vates, Mt. Oliver
Vite Edgar VanKirk, Pittsburgh
†Carey J. Vaux, Pittsburgh
Carl Kaiser Wagener, Pittsburgh
James Kerchner Wagenseller, Pittsburgh
John Huber Wagner, Pittsburgh
Wilder Judd Walker, Wilkinsburg
Paul Hardtmeyer Walter, Pittsburgh
William Summers Watson, Pittsburgh
Maxmillian Hugo Weinberg, Pittsburgh
Benjamin Weiner, Pittsburgh
Charles Isaac Wendt, Pittsburgh
Elmer Erastus Wible, Pittsburgh
William Tell Wildhaber, Pittsburgh
Joseph Coulter Wiley, McKeesport
Victor Albert Williams, Pittsburgh
Nathaniel Wm. Winkelman, Bridgeville
George Ross Winters, Pittsburgh
Fred Wohlwend, Tarentum
Charles Hernell Wolfe, Pittsburgh
Edward Bigelow Woods, Pittsburgh
Randall Zimmerman, Wilmerding
†Edward William ZurHorst, Pittsburgh

ARMSTRONG COUNTY

Thomas R. Hillard, Widnoon
Benjamin James Longwell, Seminole
Thomas Newton McKee, Kittanning
James Earle Quigley, Adrian

BEAVER COUNTY

†William F. Beitsch, New Brighton
John Huey Boal, Freedom
George Fay Boal, Freedom
Ralph Henderson Boots, New Brighton
Snowden Keniston Hall, Beaver Falls
Francis Howard McCaskey, Freedom
William Craig Meanor, Beaver
George Walworth Mellon, Woodlawn
Russell Cisney Parson, Ambridge
Samuel Henry Pettler, New Brighton
William Henry Shields, Koppel
Guy Scofield Shugert, Rochester
†Boyd Bell Snodgrass, Rochester
Jesse Howard Swick, Beaver Falls
Leroy Stewart Townsend, Beaver Falls
Fred Bailey Wilson, Beaver

BEDFORD COUNTY

John C. Anderson, Jr., Schellburg
Wilmot Ayres, Bedford
Thomas Wood Cook, Osterburg
†Calvin Charles Deibert, Bedford
Lloyd Rogers Meyers, Everett
James Andrew Shaffer, Loysburg
William F. Stachell, Saxton
Alvin Zenas Stoner, Cumberland Valley

BERKS COUNTY

†H. Melvin Allen, Reading
Frank Levi Baum, Athol
Abner Henry Bauscher, Temple
Paul N. Bowman, Reading
Roy Douglas Champlain, Reading
John Roy Conover, Reading
Leon Calvin Darrah, Reading
Charles Brewer Dotterer, Boyertown
Paul Henry Gerhardt, Reading
Edward Knight Golding, Reading
David Solomon Grim, Reading
Clifford Leslie Kaucher, Reading
William Gottlieb Kinsley, Reading
John Glenwood Knauer, Reading
John Elias Livingood, Womelsdorf
William Samuel Long, Reading
Franklin Pierce Lytle, Birdsboro
Archibald Sewell McDowell, Reading
Donald Barton McHenry, Wernersville
James Gicker Matternes, Sinking Springs
Henry Isaac Newcomet, Reading
Adam Miller Robinhold, Hamburg
Addison May Rothrock, Reading
Henry Franklin Schantz, Reading
Charles Edwin Schlappich, Bernville
Ira Groth Shoemaker, Reading
Thomas Millette Snyder, Reading
Robert Eugene Strasser, Reading
Joseph Allen Zook, Morgantown

BLAIR COUNTY

George Ellsworth Alleman, Altoona
Fred H. Bloomhardt, Altoona
Carey Clarence Bradin, Tyrone
Arthur St. Clair Brumbaugh, Altoona
†Webster Calvin, Hollidaysburg
Roy Deck, Hollidaysburg
John Hughes Galbraith, Altoona
Andrew J. W. Handwork, Altoona
John Dan Hogue, Altoona
Ernest Justin Hoover, Altoona
Logan E. Hull, Altoona
David Kaufman, Altoona
Don Cameron Kyper, Altoona
Brooklyn Boyer Levengood, Bellwood
Richard Samuel Magee, Altoona
John Blaisdell Nason, Tyrone
William H. Robinson, Roaring Spring
Henry Brown Replogie, Altoona
David Michael Roundabush, Altoona
Walter Jordan Sener, Altoona
Samuel Calvin Smith, Hollidaysburg
Claude Edwin Snyder, Altoona
John R. T. Snyder, Altoona
James Swalm Taylor, Altoona
Herbert Chester Thomas, Altoona

BRADFORD COUNTY

Arthur Judson Bird, Overton
William R. Campbell, E. Smithfield
Howard Cornelius Down, Wysox
James Robert Gemmill, Canton
Grant Hardin Gustin, Sylvania
Donald Guthrie, Sayre
Carlyle Newton Haines, Sayre
John Mark Higgins, Sayre
Carlos Pennington Holcomb, Athens
Thomas Benjamin Johnson, Jr., Towanda
Walter Edward Lundblad, Sayre
Philip Marvel, Jr., Sayre
George H. B. Terry, Wyalusing

BUCKS COUNTY

John Morris Carter, Eddington
Victor Jones P. Jourdan, Bristol
James Kay, Foxchase
James Monroe Klenk, Tullytown
*William Cooper LeCompte, Bristol
Samuel Augustus Leinbach, Quakertown
Victor K. Marsteller, Spinnerstown
Percy Musgrave, Doylestown
George Albert Parker, Jr., Newtown
Samuel LeRoy Ridge, Langhorne
Grover Cleveland Schwartz, Perkasie
William Henry Schwartz, Perkasie
John Joseph Sweeney, Doylestown
James Frederick Wagner, Bristol
Stephen S. P. Wetmore, Morrisville

BUTLER COUNTY

Ephraim B. Campbell, Butler
Willard Burton Campbell, Harrisville
Clarence Henry Ketterer, Butler
Walter Thomas Lowry, Prospect
Claude Albert Robb, Butler
Alois Frank Seifries, Mars
Roy Logan Stackpole, Butler
Lawrence Lorraine Stepp, Valencia
Eugene Storer, West Winfield
Elgie L. Wasson, Butler
Clinton M. Young, Queens Junction

CAMBRIA COUNTY

Alfred Morton Bergstein, Amsbry
John Walter Bancroft, Johnstown.
John Walter Barr, Nanty Glo
Francis Betterly, Johnstown
John Dennis Bowen, Johnstown
Benjamin Franklin Bowers, St. Benedict
Kent Amos Bowman, Johnstown
Edwin Charles Boyer, Johnstown
Bennett Arthur Braude, Johnstown
Ezra Pope Dickinson, St. Michael
Albert Frank Dunsmore, Barnesboro
Albon Ellsworth Fichtner, E. Conemaugh
Harry Franklin Garman, Spangler
George G. Grazier, Johnstown
William Edward Grove, Johnstown
George Hay, Johnstown
Charles Elliott Hays, Johnstown
Bernard Charles Healey, Barnesboro
Leo William Hornick, Johnstown
William Conrad Kessler, Ehrenfeld
Clarence Eugene King, Elmora
†John Bodine Lowman, Johnstown
†James Albert Lynch, Cresson
Clayton Lloyd McCoy, Hastings
Joseph J. Mayer, Johnstown
Louis Henry Mayer, Jr., Johnstown
Gomer Edward Metherell, Conemaugh
†Clarence Beacon Millhoff, Johnstown
Arthur Miltenberger, Johnstown
†Harry Hartzell Penrod, Johnstown
Harry Thomas Prideaux, Cresson
Daniel Pattee Ray, Johnstown
William John Reddy, Johnstown
Frank George Scharmann, Johnstown
Frank M. B. Schram, Johnstown
William Cullen Spalding, Cresson
Claude Joseph Weaner, Johnstown

CARBON COUNTY

Joseph John Bellas, Lansford
Robert Albert Cristman, Palmerton
Harold Edwards Hersh, Palmerton
Paul Henno Hunsicker, Beaver Meadows
Oscar J. Kingsbury, Nesquehoning
Robert Harrison Kistler, Lansford
†John Weaver Luther, Palmerton
Maurice Henry Neumuller, Lansford

CENTER COUNTY

George Potter Ard, Woodward
David Dale, Bellefonte
†Peter Hoffer Dale, State College
William S. Glenn, Jr., State College
Samuel James Marks, Philipsburg
†Penrose H. Shelley, Pleasant Gap

CHESTER COUNTY

Frederick Lewis Baker, Atglen
Chester LeRoy Barry, Oxford
James Arthur Buchanan, Strickersville
Charles Abraham Cahn, Coatesville
Charles Blum Dietterich, Parker Ford
John Aloysius Farrell, West Chester
William Gifford Francis, Coatesville
DeHaven Hinkson (colored), Coatesville
Guy Truman Holcomb, Oxford
I. P. P. Hollingsworth, West Chester
Clarence S. Kurtz, Malvern
John Whitfield Merryman, Kennett Sq.
Lawrence Clayton Moore, Chatham
†Charles Rees Palmer, West Chester
†Henry Pleasants, Jr., West Chester
Charles Ira Pratt, Coatesville
Mark Calvin Rabert, Phoenixville
Frank Llewellyn Richards, Berwyn
Harold Dana Rogers, West Chester
Henry Abraham Rothrock, West Chester
Jacob J. Schwegler, Kennett Square
George King Strode, West Chester
Frank H. Wells, Chester Springs
Wm. W. Woodward, West Chester
Charles Alvin Yocum, Phoenixville

CLARION COUNTY

Charles Arnold Fitzgerald, Clarion
William Charles Keller, New Bethlehem
Charles Arthur Mooney, Curllsville
Franklin Pierce Phillips, Clarion

CLEARFIELD COUNTY

William Campbell Browne, Burnside
Howard Austin Collins, Winburne
Arthur Donald Cowdrick, Clearfield
James Hudson Fiscus, Boardman
Harry Culbertson Fulton, Dubois
James Marshall Hammett, Winburne
Joseph Walter Harshberger, Mahaffey
Bradley Hartman Hoke, Coalport
Henry Horning, Ansonville
George Breen Kirk, Kylertown
Homer H. Lewis, Lecontes Mills
Austin Chalmer Lynn, Osceola Mills
Arthur Foster McCormick, Falls Creek
Frank Klare Miller, Madera
William Scott Piper, Clearfield
†Lever Flegal Stewart, Clearfield
Harry Arthur Vosburg, Jr., Dubois

CLINTON COUNTY

Joseph Mackay Corson, Chatham Run
John B. Critchfield, Lock Haven
†George Dorsey Green, Lock Haven
James Louis Lubrecht, Lock Haven
Albert James Storm, Renova
George Hey Tibbins, Beech Creek
Perry McDowell Tibbins, Beech Creek

COLUMBIA COUNTY

Henry Bierman, Bloomsburg
Jacob Ralph Brobst, Bloomsburg
Allen Vincent Carl, Numidia
William C. Hensyl, Berwick
John Trempes Macdonald, Bloomsburg
James R. Montgomery Jr., Bloomsburg
Charles Benjamin Yost, Bloomsburg

CRAWFORD COUNTY

Edwin Ellsworth Brophy, Meadville
Harry Lee Brush, Conneaut Lake
Arne Wilbur Clouse, Geneva
Frank Allison Clawson, Meadville
Samuel James Dickey, Conneautville
Valentine Burton Eiler, Titusville
William Emory Hyskell, Meadville
†James Clarke Logan, Titusville
Joseph Charles McFate, Meadville
David Clinton Mock, Cambridge Springs
George Adrian Poux, Meadville
Andrew Ignatius Rosenburger, Meadville
Albert Claudius Shannon, Titusville
William Barton Skelton, Meadville
William Walter Wilkinson, Meadville
Clyde Lewis Williams, Harmonsburg

CUMBERLAND COUNTY

Selden Sylvester Cowell, Huntsdale
Edgar Shuman Everhart, Lemoyne
Harry B. Fralic, Mt. Holly Springs
Elmer A. Hudson, Carlisle
Henry Cuthbert Lawton, Camp Hill
Enos K. Lefever, Boiling Springs
*John Bruce McCreary, Shippensburg
Perry William McLaughlin, Newville
William Tell Phillipy, Carlisle
Edward Robert Plank, Carlisle
†William Starick Ruch, Carlisle
Henry Albert Smith, Mechanicsburg
†Harry Allen Spangler, Carlisle
Parker Ulysses Wagoner, Carlisle

DAUPHIN COUNTY

J. C. Alexander, Harrisburg
†Carson Coover, Harrisburg
†John Franklin Culp, Harrisburg
Henry Rhea Douglas, Harrisburg
William Tyler Douglass, Harrisburg
†William Wirt Eichelberger, Harrisburg
William Powell Evans, Middletown
Herbert Franklin Gross, Harrisburg
*Thomas Wright Jackson, Harrisburg
George B. Kunkel, Harrisburg
Jesse Lurther Lenker, Harrisburg
John William MacMullen, Harrisburg
Richard Jonathan Miller, Harrisburg
George Reily Moffitt, Harrisburg
Roscoe Livingston Perkins, Harrisburg
Clarence Reynolds Phillips, Harrisburg
†Benjamin F. Royer, Harrisburg
Frank Lendis Shenk, Linglestown
Frederick C. Smith, Halifax
Alfred Desch Strickler, Harrisburg
*Walter Scott Taylor (col.), Steelton
George Abraham Treiman, Harrisburg
Charles Ira Trullinger, Harrisburg
Richard Yoffe, Harrisburg

DELAWARE COUNTY

George Lawrence Armitage, Eddystone
Thomas Arthur Booth, Boothwyn
†Claude Passmore Brown, Glenolden
Edwin Corliss Bullock, Upland
Howard Sherwood Busler, Lansdowne
Ethan Allen Campbell, Chester
John O. Crist, Chester
Henry Cheesman Dooling, Norwood
Louis Simon Dunn, Chester
William Benedict Evans, Chester
†William Knowles Evans, Chester
John Schofield Eynon, Chester
Louis Fleming Fallon, Wayne
Michael Freeman, Chester
†William Henry Furness, Wallingford
Harry Gallagher, Glenolden
Samuel Beveridge Harris, Norwood
Peter McC. Keating, Wawa
Robert Anthony Kilduffe, Chester
Francis Joseph King, Lansdowne
Walter A. Landry, Chester
Clarence Wyman Lincoln, Wayne
James Collier McConaughey, Wayne
†John Aloysius McKenna, Lansdowne
Daniel Parish Maddux, Chester
†Casper Wistar Miller, Wallingford
Francis Herron Murray, Chester
Frank Richard Nothnagle, Chester
Isaac Ivison Parsons, Media
Isaac Burton Roberts, Llanerch
Charles Andrew Rowland, Chester
Charles Beverly Shortlidge, Lima
Thomas Cook Stellwagen, Jr., Media
Harry Thomas Stockton, Marcus Hook
Albert Meredith Thomas, Glenolden
Cyrus Walter Truxal, Wayne
John Hazlett Turner III, Glenolden
Walter John Whitehouse, Marcus Hook

ELK COUNTY

Samuel Gilmore Logan, Ridgway

ERIE COUNTY

Martin Clement Barrett, Erie
Ignatius A. Bednarkiewicz, Erie
John Eastman Belding, Erie
Guy Cluxton Boughton, Erie
James Elmer Croop, Erie
Arthur George Davis, Erie
Joseph Edward Dudenhoefer, Erie
Harold Alfred Ghering, Edinboro
Ninde Troy Gillette, Corry
Scott Dillon Gleeten, Erie
Homer E. Griswold, Erie
James Louis Heard, North East
Ralph Emerson Henry, Erie
Elmer Hess, Erie
Jesse Burket Howe, Erie
James DeWitt Jackson, Erie
Charles Cochran Kemble, Erie
Lemuel Abraham Lasher, Erie
Henry Lee Lewis, Erie
Carl Blaine Lininger, Erie
John Hepburn Lloyd, Erie
Harry Eugene Lyons, Fairview
Frank Peter McCarthy, Erie
Whitman Carlisle McConnell, Erie
Charles Alexander McNeil, Erie
Adelbert Boyd Miller, North Girard
Richard Oliver Miller, Erie
John Joseph O'Donnell, Erie
George Arthur Reed, Erie
William Ridgway Rothe, Erie
John Franklin Rutherford, Cranesville
George William Schlindwein, Erie
James Robert Smith, Erie
Joseph Armin Stackhouse, Erie
Jesse Cunningham Stilley, Erie
Ross W. Thompson, Wesleyville
LeRoy Umburn, Albion
Elmer Grant Weibel, Erie

FAYETTE COUNTY

William James Bailey, Connellsville
Samuel Austin Baltz, Uniontown
Charles Dana Bierer, Uniontown
†Harry Brady, Grays Landing
Don Dickinson Brooks, Connellsville
James Basil Carroll, Dunbar
Andrew Jackson Colborn, Connellsville
Albert Edward Coughanour, Uniontown
George Torance Crosbie, Belle Vernon
Carlton Harold Davidson, New Salem
Charles James Devlin, Point Marion
Paul Goewey Dick, Connellsville
Benjamin Perkins Doran, Uniontown
Edward Wark Douglas, Connellsville
†Elliott Bard Edie, Connellsville
W. Sturgis Frankenburger, Allison
Horace B. Guiher, Smithfield
Eben Russell Ingraham, Mastontown
Robert Harrison Jeffrey, Uniontown
James Lester Junk, Connellsville
†Alexander Robert Kidd, Connellsville
George Washington Long, Alicia
David Earle Lowe, New Salem

†Clark McEwen Luman, Uniontown
Samuel Earl Lyon, Mount Braddock
Jesse Lazear McCracken, Smithfield
William A. McHugh, Jr., Uniontown
George Fulton MacDonald, Brownsville
John Lindsey Messmore, Masontown
Walter Teed Messmore, Uledi
Arthur Keys Odbert, S. Brownsville
William Proudfit Patterson, Fairchance
George H. Robinson, Uniontown
Charles Calvin Ryan, Republic
Roy Loraine Scott, Fairchance
Earl Cleveland Sherrick, Connellsville
†Charles Hervey Smith, Uniontown
Alexander White Spears, Grindstone

FRANKLIN COUNTY

John Berry, Mont Alto
Samuel Thomas Brown, Waynesboro
Henry Adam Carskadden, Mont Alto
Frank Newcomer Emmert, Chambersburg
Charles Core Gans, Chambersburg
John Albert B. Lowry, Mont Alto
Jacob Sam. Posner Makler, Mont Alto
Augustine Joseph Mulligan, Mont Alto
Bruce Emerson Nevin, Mercersburg
Theodore Peters, Chambersburg
Lewis Hiram Seaton, Chambersburg
Nathaniel George Shafritz, Mont Alto
David Miller Shoemaker, Waynesboro
Maurice Theodore Sloane, Mont Alto
†Richard Penn Smith, Fort Loudon
Harrison Morton Stewart, Mont Alto
Michael Webster Stofer, Chambersburg
William Wilson Woods, Mont Alto

FULTON COUNTY

James Malcolm McKibbin, Buck Valley

GREENE COUNTY

Harry S. Monroe, Wind Ridge

HUNTINGDON COUNTY

Henry Bley, Dudley
Cloy Carver Brumbaugh, Huntingdon
Samuel Oscar Brumbaugh, Huntingdon
Raymond Rudolf Decker, Orbisonia
John Maulfair Keichline, Petersburg
Michael Richard Long, Saltillo
James Robert Morrow, Mount Union

INDIANA COUNTY

Leon Jermain Camche, Waterman
Albert William Clark, Ernest
Medus Monroe Davis, Indiana
J. Merle Everwine, Clymer
Clair Guy Harmon, West Lebanon
Abraham Jerome Kaiser, Saltsburg
Charles Henry Kirk, Homer City
George Ray Lyon, Heilwood
Thomas James McNelis, Lucerne Mines
William Henry Nix, Indiana
Melville Mack Palmer, Homer City
Clark Monroe Smith, Plumville
Frank Burton Stevenson, Indiana
John M. Stewart, Marion Center
Charles Chester Wallace, Black Lick
†James Ward, Lucerne Mines
William Charles Widdowson, Black Lick

JEFFERSON COUNTY

Frederick W. Black, Punxsutawney
Walter Dick, Ramsaytown
Leo Zeno Hayes, Conifer
Maurice C. James, Punxsutawney
Jeremiah A. Klotz, Punxsutawney
Guy Musselman Musser, Punxsutawney
Alverdi John Simpson, Summerville
Wayne Lawson Snyder, Brookville
Charles Robert Stevenson, Delancey
John Whann, Jr., Soldier
Howard T. Wickert, Punxsutawney

JUNIATA COUNTY

Percy Edward Deckard, Richfield

LACKAWANNA COUNTY

John Vincent Allen, Jr., Scranton
George Brown Beach, Scranton
John Joseph Bendict, Olyphant
Daniel Edward Berney, Scranton
Frederick John Bishop, Scranton
John Decker Butzner, Scranton
Frank Andrew Carroll, Scranton
Harvey Burton Cornell, Scranton
†John Bliss Corser, Scranton
Eugene Augustine Curtin, Dunmore
Emlyn Thomas Davies, Old Forge
Philip Jenkins Davies, Scranton
William Rowland Davies, Scranton
Arthur Eggleston Davis, Scranton
Earle Rice Davis, Scranton
Fred Whitney Davis, Scranton
Reese Davis, Scranton
William Joseph Lee Davis, Scranton
William John Dougherty, Scranton
James Nelson Douglas, Scranton
George Joseph Edmunds, Scranton
Leo Patrick Gibbons, Scranton
Howard Winslow Gibbs, Scranton
Francis Michael Ginley, Dunmore
Francis Brian Gryczka, Simpson
Almon Cyrus Hazlett, Dunmore.
Heister Vanderslice Hower, Scranton
David John Jenkins, Scranton
Thomas Gore Killeen, Scranton
Harry Michael Kraemer, Scranton
James Davis Lewis, Scranton
John Lawrence Loftus, Old Forge
Jacob John Lonsdorf, Jr., Scranton
John William Lyons, Jessup
Thomas Patrick Martin, Mayfield
Connell Edward Murrin, Scranton
Joseph S. Murrin, Carbondale
James Joseph O'Conner, Dickson City
William James O'Malley, Scranton
James Edward O'Toole, Scranton
Ernest Leland Peet, Scranton
Milton Irving Pentecost, Peckville
Lewis Herbert Raymond, Scranton
†John Isaac Robison, Scranton
James Peter Haggerty Ruddy, Scranton
Elmer Bryant Shaul, Scranton
Frank Paul Strome, Scranton
John Joseph Sullivan, Jr., Scranton
Howard Locke Vail, Dalton
*Jonathan M. Wainwright, Scranton
Frank Robert Wheelock, Scranton
Robert Vanderberg White, Scranton
Albert Jefferson Winebrake, Scranton
John Francis Zychowicz, Scranton

LANCASTER COUNTY

*Theodore Burton Appel, Lancaster
John Delmer Boger, Lancaster
Henry Blaine Davis, Lancaster
Pursifor Frazier Guie, Manheim
Harry Gilmore Hassenplug, Lancaster
William Hubley Herr, Lancaster
John Lincoln Hertz, Lititz
John Rosa Smith Martin, Christiana
†Elmer Lower Prizer, Lancaster
DeLa Ray Rignor, Quarryville
Gardner Atlee Sayres, Lancaster
Charles Joseph Sbillott, Columbia
Grant Bixler Weaver, Lancaster
William McC. Workman, Mount Joy

LAWRENCE COUNTY

James Magee Blackwood, New Castle
Thaddeus Clair Brown, New Castle
William David Cleland, New Castle
Jesse Robert Cooper, New Castle
William John Davidson, New Castle
Colin Marcus Dunn, Ellwood City
John Foster, New Castle
Perry Stevenson Gaston, New Castle
Louis Ward Grossman, New Castle
Charles McClellan Iseman, Ellwood City
Don Carlos Lindley, New Castle
Boyd E. Schaffner, Ellwood City
†Charles James Smyser, New Wilmington
Frank Forrest Urey, New Castle
†David Blair Vosler, Ellwood City

LEBANON COUNTY

Simeon David Bashore, Palmyra
Adam George Heilman, Lebanon
John Edward Marshall, Lebanon
William Horace Means, Lebanon
David M. Vogt, Newmanstown
Ralph Ward Walker, Lebanon

LEHIGH COUNTY

Quintin David Arner, Allentown
Warren H. Butz, Macungie
†Percy Octave Chandron, Allentown
George Solomon Deibert, Allentown
John Thomas Eckert, Allentown
Malcolm David Holben, Slatington
Walter Emery Lang, Allentown
Frank Hartzell Long, Coopersburg
Ruben Axel E. Peterson, Allentown
Charles B. Reitz, Allentown
Clarence Calvin Rogers, Allentown
Thomas Lawrence Smyth, Allentown
Thomas Hewitt Weaber, Allentown

LUZERNE COUNTY

Erick Archibald Adams, Wilkes-Barre
Francis L. Alexaitis, Wilkes-Barre
Thompson McD. Baird, Wilkes-Barre
Ralph Emerson Buckley, Hazleton
Joseph Parker Burke, Pittston
Anthony J. Caffrey, Wilkes-Barre
Benjamin B. Cook, Wapwallopen
Barnett Herman Cooper, Glen Lyon
James Anthony Cuozzo, Hazleton
Abe Albert Dattner, Kingston
William John Davis, Wilkes-Barre
William F. Davison, Dorranceton
Louis Alfred Dessen, Hazleton
Charles Seymour Dickinson, Freeland
Joseph F. Dolphin, Wilkes-Barre
Francis Edward Donnelly, Plymouth
William Joseph Doyle, Wilkes-Barre
Wilmer C. Dreibelbies, Wilkes-Barre
John Rose Dyson, Hazleton
Charles Henry Ernst, Wilkes-Barre
Peter Edward Fagan, Hazleton
Stanley Leopold Freeman, Wilkes-Barre
Thomas Reed Gagion, Wilkes-Barre
John Webster Gressler, Wilkes-Barre
Morgan Everett Griffith, Wilkes-Barre
William Fuller Harrison, Plains
Austin L. Hauslobner, Wilkes-Barre
Frederick William Heyer, Nanticoke
August Gustav Hinrichs, West Pittston
John J. Hislop, Miners Mills
Cyrus Jacobosky, Wilkes-Barre
Joseph C. Kochczynski, Hazleton
Joseph James Kocyan, Plains
Robert Ottens Koons, Conyngham
Francis John Krajewski, Wilkes-Barre
Walter Leonard Lynn, Wilkes-Barre
John Joseph McHugh, Parsons
Thomas V. McLaughlin, Wilkes-Barre
Alexander John McRae, Wilkes-Barre
Isaiah C. Morgan, Edwardsville
Peter Burrill Mulligan, Hazleton
Leo Clement Mundy, Wilkes-Barre
Robert Harrison Murdock, Wilkes-Barre
Charles Frederick Netzel, Plymouth
Harry J. Owens, Hazleton
Lee De Lance Parry, Rock Glen
Charles H. Phillips, Wilkes-Barre
Herbert LeRoy Ransom, Pittston
Albert Augustus Redelin, Freeland
William C. Reese, Wilkes-Barre
†Simon W. Reichard, Wilkes-Barre
Otto Carl Reiche, Hazleton
Daniel Guy Robinbold, Forty Fort
Lewis L. Rogers, Kingston
Samuel J. Rose, Hazleton
†Nathaniel Ross, Wilkes-Barre
Harry Rubenstein, Pittston
Marshall Cloyd Rumbaugh, Kingston
Burton Clarence Rumbel, Conyngham
George Ario Shuman, Wilkes-Barre
A. Burton Smith, Wyoming
Harry Alexander Smith, Wilkes-Barre
William Clifton Stiff, Plymouth
Frank Paul Summa, Nanticoke
Frank D. Thomas, Dorranceton
John Benjamin Tobias, Wilkes-Barre
August Trapold, Wilkes-Barre
Roy Truckenmiller, Freeland
William Watkins Waters, Nanticoke
Clarence Worrell, Pittston
Clark H. Yeager, Wilkes-Barre

LYCOMING COUNTY

Lee McCloskey Goodman, Jersey Shore
Waldo Willard Hull, Williamsport
†James Sherman Mosher, Williamsport
Milfert Weaver Myers, Williamsport
John Budd Nutt, Williamsport
George Alvin Poust, Hughesville
†Robert F. Trainer, Williamsport
Wilbur Emerson Turner, Montgomery

McKEAN COUNTY

Albert J. Colcord, Port Allegany
Robert Hamilton, Smethport
Evan O'Neill Kane, Kane
Earle McCormick McLean, Eldred
William Alonzo Ostrander, Smethport

MERCER COUNTY

Carl Henry Bailey, Jamestown
Frederick O. Batteiger, Greenville
Edward J. Braun, Farrell
Arthur Eugene Brown, Greenville
Benjamin Allen Frye, Sharpsville
Lawrence Norman Breene, Farrell
Orlando A. Jones, Sharon
Frederick William Knippel, Mercer
Edwin Marshall McConnell, Grove City
Clarence W. McElhaney, Greenville
Augustus Michael O'Brien, Sharon
†William Waddle Richardson, Mercer
John Francis Spearman, Sharon
Homer Smith Wilson, Grove City
William Morgan Writt, Farrell

MIFFLIN COUNTY

Charles Milton McCoy, Lewistown
†Frederick Augustine Rupp, Lewistown

MONROE COUNTY

Walter Leon Angle, East Stroudsburg
Charles Stewart Flagler, Stroudsburg
Alfred Lawrence Rhoads, Tobyhanna
Carl B. Rosenkrans, E. Stroudsburg
Richard Slee, Swiftwater
John H. Stearns, Delaware Water Gap
Harry S. VanEtten, Stroudsburg

MONTGOMERY COUNTY

Frederick Blunt Allen, North Wales
Henry Croskey Allen, Schwenksville
James Harold Austin, Ardmore
Albert N. Baggs, Abington
†Joseph Warren Bauman, Lansdale
Walter Allen Blair, Norristown
Joseph Howard Cloud, Ardmore
Edward Foulke Corson, Cynwyd
Albert Crosby, Abington
†Henry Culp Earnshaw, Bryn Mawr
George Yancey Gillespie, Bryn Mawr
Edward Johnston Gordon, Wyncote
Walter Scott Hanley, North Wales
David G. Harvey, Bethayres
Richard Dale Hopkinson, Jenkintown
William Henry M. Imhoff, Willow Grove
Samuel Jaffe, Norristown
Russell R. Keeler, Harleysville
Clark Samuel Long, Norristown
Howard Kimball Longshore, Glenside
Walter S. Lucas, Wynnewood
Charles Williamson Luders, Cynwyd
James Aloysius McCracken, Norristown
Lee Filman Mauger, Pottstown
Alexis Merritt Melvin, Royersford
†George William Miller, Norristown
†Charles Louis Olds, Bryn Athyn
†Frederick D. Owsley, Rydal
Edwin Spooner Potter, Ardmore
William C. Powell, Jr., Bryn Mawr
David Duer Reynolds, Bryn Mawr
Aaron Leidy Ruth, Conshohocken
Henry Nathaniel Scholl, Kulpsville
†John Semple Sharpe, Haverford
Herbert Benjamin Shearer, Norristown
William C. Sheehan, Erdenheim
Isaac High Shelly, Ambler
James A. Shelly, Ambler
Robert Shoemaker, Ogontz
Edward Rufus Sibley, Elkins Park
John C. Simpson, Norristown
Henrik Van Renken Stam, Bryn Mawr
†Henry Clement Welker, Norristown
†Henry Winsor, Haverford
Russell Garth Witman, Conshohocken
†R. Vincent Wolfe, Norristown

MONTOUR COUNTY

Burgess Allen Gibson, Danville
James S. Hammers, Danville
Raymond Jack Hauser, Danville
John Edmund Struthers, Danville

NORTHAMPTON COUNTY

William Earnest Andrew, Pen Argyl
Foster Aaron Beck, Wind Gap
Sem Grim Beck, Hecktown
Walter J. Cathrall, South Bethlehem
Francis Stapleton Chambers, Easton
John Simpson Crater, Easton
†William L. Estes, South Betblehem
William L. Estes, Jr., South Bethlehem
Rollo Howard Hoey, Easton
Thomas Benjamin Kern, Bethlehem
Paul Howard Kleinhans, Bethlehem
Harry Fritz Leibert, South Bethlehem
John Bertrand McAvoy, S. Bethlehem
Victor Samuel Messinger, Easton
David William Morgan, Bethlehem
John Fisk Park, South Bethlehem
Stewart Emmert Rauch, Bethlehem
Floyd Elmer Shaffer, Bethlehem
Frederick Abraham Sherrer, Easton
William Arthur Smythe, Bethlehem
William Gilbert Tillman, Easton
Normal A. Timmins, South Bethlehem
Harvey Claude Updegrove, Easton
†William P. Walker, South Bethlehem

NORTHUMBERLAND COUNTY

Francis Raymond Adams, Watsontown
Charles Napoleon Brosius, Shamokin
†Stoddard S. Burg, Northumberland
Charles Culp Cooner, Kulpmont
Raymond Clair Fagley, Kulpmont
Samuel Beaver Geise, Sunbury
Lloyd Mott Holt, Shamokin
Adna Sawyer Jones, Shamokin
Sidney Kallaway, Shamokin
Roscoe Frederick Mauser, Shamokin
Oscar Eisenhart Salter, Shamokin
Edmund Roger Samuel, Mount Carmel
Richard Henry Simmons, Shamokin
James Gardner Strickland, Shamokin
Charles Meade Thomas, Sunbury
Boyd Edwin Wilkinson, Trevorton

PERRY COUNTY

George Milton Bogar, Liverpool
Charles Reif Snyder, Marysville
Maurice Isaac Stein, New Bloomfield
Harvey Wharton Woods, Blain

PHILADELPHIA COUNTY

*Alexander Abbott, Philadelphia
Charles Shewell Abbott, Philadelphia
Lewis Harry Adler, Jr., Philadelphia
Herman Emil Albrecht, Philadelphia
Markley Cameron Albright, Philadelphia
Emory Graham Alexander, Philadelphia
John Alexander, Philadelphia
Francis A. Allen, Jr., Philadelphia
Kenneth D. A. Allen, Philadelphia
Herman Boyden Allyn, Philadelphia
Robert Swan Alston, Philadelphia
Andrew Anders, Philadelphia
†James M. Anders, Philadelphia
†George Burton Angle, Philadelpbia
Wm. Honeyford Annesley, Philadelphia
Harold Taylor Antrim, Philadelphia
Clarence Elwood Apple, Philadelphia
John George Archer, Jr., Philadelphia
Thomas M. Armstrong, Philadelphia
James Horatio Arnett, Philadelphia
Joseph David Aronson, Philadelphia
Edward Louis Artman, Jr., Philadelphia
Astley P. C. Ashhurst, Philadelphia
*William E. Ashton, Philadelphia
Eugene J. Asnis, Pbiladelphia
George Mason Astley, Philadelphia
†James P. Austin, Philadelphia
Joseph John Austra, Philadelphia
†Ira Ayer, Philadelphia
†W. Wayne Babcock, Pbiladelphia
†Benjamin F. Baer, Jr., Philadelphia
George F. Baier, Jr., Philadelphia
Matthew Carroll Baines, Philadelphia
Harold Frederick Baker, Philadelphia
James Harvey Baldwin, Philadelphia
DeForrest Ballou, Jr., Philadelphia
Chester Arthur Bardsley, Philadelphia
Charles A. Barron, Philadelphia
William David Barry, Philadelphia
Frank F. Barthmaier, Philadelphia
Othmar F. Barthmaier, Philadelphia
Charles O. W. Bartine, Philadelphia
Sydney Elon Bateman, Philadelphia
Frank Diener Baumann, Philadelphia
William David Baun, Philadelphia
*Edward J. G. Beardsley, Philadelphia
*John Norman Beary, Philadelphia
Robert Harvey Behleman, Philadelphia
Basil R. Beltran, Philadelphia
Paul Benjamin Bender, Philadelphia
Franklin Duffield Benedict, Philadelpbia
Albert Page Berge, Philadelphia
†David H. Bergey, Philadelphia
Leo Heller Bernd, Philadelphia
John Allan Bertolet, Philadelphia
John Percy Bethel, Philadelphia
Charles A. Bigler, Jr., Philadelpbia
Joseph Cooper Birdsall, Philadelphia
Aaron Lafayette Bishop, Philadelphia
Lawrence L. Blackburn, Philadelphia
Mortimer Warren Blair, Philadelphia
Samuel Isett Bloomhardt, Philadelphia
James Widley Bodley, Philadelphia
Arthur Emerson Bogart, Philadelphia
John Waldo Boggs, Philadelphia
Reuben Arnold Bogia, Philadelphia
Robert H. Bolling, Philadelphia
†Earl Danford Bond, Philadelphia
Benjamin Borow, Philadelphia
†Francis Frank Borzell, Philadelphia
Frank E. Boston (col.), Philadelphia
Samuel C. Boston (col.), Philadelphia
John Oscar Bower, Philadelphia
Benjamin Bowman, Philadelphia
Charles Jacob Bowne, Philadelphia
†George M. Boyd, Philadelphia
Samuel Harold Boyd, Philadelphia
Irvine Manning Boykin, Philadelpbia
Hugh Cotter Boyle, Philadelphia
Clarence Davis Bradley, Philadelphia
John William Bransfield, Philadelphia
William Ramsey Bready, Philadelphia
William C. Bridges (col.), Philadelphia
Frank Aloysius Bridgett, Philadelphia
†Ward Brinton, Philadelphia
Samuel Brister, Philadelphia
Ralph Shepherd Bromer, Philadelphia
†Macy Brooks, Philadelphia
Harold S. Broomall, Philadelphia
Benjamin Brown, Pbiladelphia
George Arnold Brown, Philadelphia
†Henry Paul Brown, Jr., Philadelphia
Seth Arthur Brumm, Philadelphia
John E. B. Buckenham, Philadelphia
Allen Garfield Buckley, Philadelphia
Frank Walton Buge, Philadelphia
†Josiah T. Bunting, Philadelphia
Joseph Patrick Burns, Philadelphia
Michael Anthony Burns, Philadelphia
*Stillwell C. Burns, Philadelphia
Benjamin Franklin Busby, Philadelphia
Alexander Cooke Butcher, Philadelphia
†Albert Butler, Philadelphia
William B. Cadwalader, Philadelphia
John Jerome Caffrey, Philadelphia
Alfred A. Calderone, Philadelphia
Raymond F. W. Campbell, Philadelphia
Harry Keyser Carey, Philadelphia
Harry Stober Carmany, Philadelphia
*John Berton Carnett, Philadelphia
Chapin Carpenter, Philadelphia
†David James Carson, Philadelphia
John Baker Carson, Philadelphia
Claude Edward Case, Philadelphia
Arthur E. S. Casey, Philadelphia
Henry Ware Cattell, Philadelphia
Charles J. Cavanagh, Philadelphia
†Burton Chance, Philadelphia
William Herbert Chandlee, Philadelphia
Samuel Chartock, Philadelphia
Harry Chereshore, Philadelphia
Samuel Julius Chernaik, Philadelphia
Frederick David Clair, Philadelphia
George Houghton Clapp, Philadelphia
Jefferson H. Clark, Jr., Philadelphia
Edward Lamar Clemens, Philadelphia
James B. Clinton, Philadelphia
Charles Higginson Cloud, Philadelphia
*George Morrison Coates, Philadelphia
*Charles A. E. Codman, Philadelphia
†Franklin Cohen, Philadelphia
Leon Solis-Cohen, Philadelphia
Myer Solis-Cohen, Philadelphia
Edwin Stanley Coke, Philadelphia
Abraham E. Colcher, Philadelphia
†Albert Newton Cole, Philadelphia
Charles James Cole, Jr., Philadelphia
Thomas Luther Coley, Philadelphia
Charles Aloysius Coll, Philadelphia
Edward Wilson Collins, Philadelphia
James Norman Combs, Philadelphia
Joseph F. Comerford, Philadelphia
Alexander J. P. Conlen, Philadelphia
†John Michael Connelly, Philadelphia
George W. Henry Conrad, Philadelphia
John Wesley Conrad, Philadelphia
Herbert Cooper, Philadelphia
Donald Bruce Coover, Philadelphia
Asa Fenton Copeland, Philadelphia
*William M. L. Coplin, Philadelphia
Michael Patrick Corcoran, Philadelphia
†Walter S. Cornell, Philadelphia
Edgar Nathan Cowan, Philadelphia
William Vincent Coyle, Philadelphia
William Frederick Craig, Philadelphia
†George Sumner Crampton, Philadelphia
Joseph Raymond Criswell, Philadelphia
Albert Manning Cross, Philadelphia
Albert Allen Crossman, Philadelphia
William Henry Crowley, Philadelphia
†John Mulchimock Cruice, Philadelphia

William L. Cunningham, Philadelphia
John D. J. Curran, Philadelphia
†John Chalmers DaCosta, Jr., Phila.
Walter John Daly, Philadelphia
Adam Peter Dambrauckas, Philadelphia
Clarence D'A. Daniels, Philadelphia
Arthur Mansberg Dannenberg, Phila.
Arthur Dare, Philadelphia
Harold Stern Davidson, Philadelphia
John Rumsey Davies, Jr., Philadelphia
Edward P. Davis, Philadelphia
Hugh Jefferson Davis, Philadelphia
Richard Sharpless Davis, Philadelphia
Samuel Thomas Day, Jr., Philadelphia
*John Blair Deaver, Philadelphia
†Percy DeLong, Philadelphia
Robert Crofford Devereux, Philadelphia
John Dibble, Philadelphia
Harry Edward Diers, Philadelphia
Henry Kuhl Dillard, Jr., Philadelphia
Edward Saunders Dillon, Philadelphia
Vincent Maria Diodati, Philadelphia
John Lee Donahue, Philadelphia
†Daniel Joseph Donnelly, Philadelphia
John Devlin Donnelly, Philadelphia
John Daniel Donovan, Philadelphia
William Murray Donovan, Philadelphia
Joseph William Dormin, Philadelphia
*George Morris Dorrance, Philadelphia
Ernest Michael Dorsett, Philadelphia
Rae Shepard Dorsett, Philadelphia
William Drayton, Jr., Philadelphia
Thomas William Druce, Philadelphia
Winslow Drummond, Philadelphia
Amos Keeler DuBell, Philadelphia
Harry A. Duncan, Philadelphia
Archie Wallace Dunn, Philadelphia
Royal Elwood Durham, Philadelphia
Richard H. Eanes, Philadelphia
Preston M. Edwards (col.), Philadelphia
*Senaca Egbert, Philadelphia
Eldridge Lyon Eliason, Philadelphia
Jacob Edgar Ellinger, Philadelphia
John Dean Elliott, Philadelphia
William Cromwell Ely, Philadelphia
Gouverneur V. Emerson, Philadelphia.
Jacob L. Engle, Philadelphia
Erwin Kuber Erney, Philadelphia
Augustus Adolph Eshner, Philadelphia
Harry Glenn Esken, Philadelphia
Omer R. Etter, Philadelphia
†Curtis Clyde Eves, Philadelphia
George Henry Faggart, Philadelphia
Clifford Bailey Farr, Philadelphia
William Wilberforce Farr, Philadelphia
†Joseph Davidson Farrar, Philadelphia
Leon Felderman, Philadelphia
Vincent John Fenerty, Philadelphia
Donald Benwick Ferguson, Philadelphia
Joseph George Fernbach, Philadelphia
Francis Scoffin Ferris, Philadelphia
Wilfrid B. Fetterman, Philadelphia
Charles Andrew Fife, Philadelphia
Harry Crawford Fish, Philadelphia
Andrew Flanagan, Jr., Philadephia
John Bernard Flick, Philadelphia
Clement A. Fogerty, Philadelphia
Jonathan Clinton Foltz, Philadelphia
Rolla Beaty Fore, Philadelphia
†John R. Forst, Philadelphia
Douglas Newton Forman, Philadelphia
Edgar Newton Fought, Philadelphia
Alexander Garrison Fowell, Philadelphia
Charles Stewart Fox, Philadelphia
†Herbert Fox, Philadelphia
*Lawrence Webster Fox, Philadelphia
†Albert Philip Francine, Philadelphia
Raymond T. Francis, Philadelphia
Lt.Col. Clarence P. Franklin, Philadelphia
*Melvin Marcus Franklin, Philadelphia
*Charles Harrison Frazier, Philadelphia
Frank E. Freeman, Philadelphia
Adolph H. Friedmann, Philadelphia
Irvin Augustus Fries, Philadelphia
Victor J. B. Fries, Philadelphia
Charles Leroy Fulmer, Philadelphia
*Charles Furbush, Philadelphia
†Milton H. Fussell, Philadelphia
John Patrick Gallagher, Philadelphia
†Sigmund Leon Gans, Philadelphia
†Henry Kennedy Gaskill, Philadelphia
Arthur H. Gerhard, Philadelphia
*John H. Gibbon, Philadelphia
†John Joseph Gilbride, Philadelphia
†Nathaniel Gildersleeve, Philadelphia
Ben Clark Gile, Philadelphia
Gershon Ginsburg, Philadelphia
*Jack Claxton Gittings, Philadelphia
†Ellis Edgar Willits Given, Philadelphia
†Edward B. Gleason, Philadelphia
Henry Granville Godfrey, Philadelphia
Maurice Goldberg, Philadelphia
Nathan Ralph Goldsmith, Philadelphia
Jacob S. Goldstein, Philadelphia
*Edward H. Goodman, Philadelphia
Harry William Goos, Philadelphia
Henry Aloysius Gorman, Philadelphia
Amos Wilson Gottschall, Philadelphia
Francis Vincent Gowan, Philadelphia
Arthur Burt Graves, Philadelphia
*Charles Prevost Grayson, Philadelphia
†Harrison Adams Greaves, Philadelphia
Toby Anthony Greco, Philadelphia
Sigmund S. Greenbaum, Philadelphia
Frank M. Greene, Philadelphia
Samuel Bruce Greenway, Philadelphia
Robert Bruce Grimes, Jr., Philadelphia
Frank Bird Gummey, Philadelphia
Anthony S. Haciejewski, Philadelphia
John B. Haines, Philadelphia
Wilford Lorenz Haire, Philadelphia
Thomas F. Hale, Philadelphia
Harry Samuel Halpern, Philadelphia
Charles T. Hamaker, Philadelphia
Percy Gatling Hamlin, Philadelphia
William Hannum, Philadelphia
James Clayton Harding, Philadelphia
William John Harrison, Philadelphia
†Charles Hart, Philadelphia
Charles D. Hart, Philadelphia
*Richard Hickman Harte, Philadelphia
Arthur Hartley, Philadelphia
Paul Edmund Haskett, Philadelphia
*Charles F. Hassan, Philadalphia
David Bittle Hawkins, Philadelphia
John Vincent Hearney, Philadelphia
Arthur Wilbert Hebert, Philadelphia
†William F. Hebsacker, Philadelphia
†Henry Heilemann, Philadelphia
Edward Peter Heller, Philadelphia
John N. Henry, Philadelphia
John Frederick Herbert, Jr., Philadelphia
Harry Ziebach Hibshman, Philadelphia
Walter A. Hickman, Philadelphia
William Marshall Hinkle, Philadelphia
Drury Hinton, Philadelphia
Otto Christian Hirsch, Philadelphia
†Edward Blanchard Hodge, Philadelphia
William George Hoeheks, Philadelphia
Solomon Fisher Hoge, Philadelphia
Charles Biddle Hollis, Philadelphia
†William C. Hollopeter, Philadelphia
Frederick M. Hoskins (col.), Philadelphia
Ulrich Peter Horger, Philadelphia
†Daniel Manfield Hoyt, Philadelphia
Francis Russell Hoyt, Philadelphia
Charles Ralston Hughes, Philadelphia
Lee Westlake Hughes, Philadelphia
John Elias Hume, Philadelphia
Robert John Hunter, Philadelphia
†Frank Humbert Hustead, Philadelphia
*James P. Hutchinson, Philadelphia
Henry B. Ingle, Philadelphia
Horace Wesley Jack, Philadelphia
Leopold Max Jacobs, Philadelphia
Rutherford Lewis John, Philadelphia
Elmer Ellsworth Johnson, Philadelphia
Lloyd William Johnson, Philadelphia
William N. Johnson, Philadelphia
*Isaac Hampshur Jones, Philadelphia
*John H. Jopson, Jr., Philadelphia
*William Michael Joyce, Philadelphia
Clarence Wrigley Judd, Philadelphia
*Henry Draper Jump, Philadelphia
John G. Jungmann, Philadelphia
Edwin Jacob Kalodner, Philadelphia
†Clinton Austin Kane, Philadelphia
Leo Anthony Kane, Philadelphia
Howard Francis Keating, Philadelphia
†Joseph Clarence Keeler, Philadelphia
Henry Edgar Keely, Philadelphia
*William W. Keen, Philadelphia
Andrew Joseph Keenan, Jr., Philadelphia
†Floyd Elwood Keene, Philadelphia
Robert A. Keilty, Philadelphia
*Elmer Edgar Keiser, Philadelphia
Frederick Eugene Keller, Philadelphia
Francis Joseph Kelly, Philadelphia
Joseph Miller Kenworthy, Philadelphia
Henry Stanley Kerchner, Philadelphia
Baldwin Longstreth Keyes, Philadelphia
†George C. Kieffer, Philadelphia
Ralph Dunleavy Killen, Philadelphia
Joseph Victor Klauder, Philadelphia
Thomas Klein, Philadelphia
William Oscar Kleinstuber, Philadelphia
Frank Crozer Knowles, Philadelphia
George Alexander Knowles, Philadelphia
Andrew Knox, Philadelphia
Carl Frederick Koenig, Philadelphia
Samuel Hill Kohlman, Philadelphhia
David Warren Kramer, Philadelphia
Charles Augustus Krauss, Philadelphia
†Edward Bell Krumbhaar, Philadelphia
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William Latimer S. Landeg, Philadelphia
Heilner Maxwell Langdon, Philadelphia
*Ernest Laplace, Philadelphia
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John Leonard Lavin, Philadelphia
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George Malcolm Laws, Philadelphia
Frederick Headley Leavitt, Philadelphia
†Theodore LeBoutillier, Philadelphia
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John Leedom, Philadelphia
Asa N. Lehman, Philadelphia
†Clarence F. M. Leidy, Philadelphia
Joseph Leidy, Philadelphia
Samuel Leopold, Philadelphia
Simon Stein Leopold, Philadelphia
William Walsh Lerman, Philadelphia
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Abraham Levy, Philadelphia
Jay Dever Linton, Philadelphia
John Adam Logan, Philadelphia
Edwin P. Longaker, Philadelphia
*Hiram R. Loux, Philadelphia
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Henry K. B. Lufford, Philadelphia
Robert McDowell Lukens, Philadelphia
Clifford Bell Lull, Philadelphia
William Joseph Lynch, Philadelphia
Cornelius T. McCarthy, Philadelphia
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†Edward William McCloskey, Philadelphia
†John Francis McCloskey, Philadelphia
Robert S. McCombs, Philadelphia
*Albert McConaghy, Philadelphia
John Harvey McCutcheon, Philadelphia
Frank Rudd McDonald, Philadelphia
James Edward McDowell, Philadelphia
†Lawrence D. McEvoy, Philadelphia
*Joseph McFarland, Philadelphia
Joseph Aloysius McGinnis, Philadelphia
John Ignatius McGuigan, Philadelphia
Benjamin M. McIntire, Philadelphia
William Page McIntosh, Philadelphia
Joseph McIver, Philadelphia
William Henry McKeever, Philadelphia
†John Joseph McKenna, Philadelphia
Benjamin W. McKenzie, Philadelphia
Howard Allison McKnight, Philadelphia
†William F. McLaughlin, Philadelphia
†John Douglas McLean, Philadelphia
Richard Langdon McMeer, Philadelphia
James William McMonagle, Philadelphia
Francis Aloysius McMullin, Philadelphia
David Randall MacCarroll, Philadelphia
Douglas MacFarland, Philadelphia
William H. Gordon Mackay, Philadelphia
Arthur Lee Mackenzie, Philadelphia
William Joseph MacMurtrie, Philadelphia
Charles Francis Mackel, Philadelphia
Charles Percy Major, Philadalphia
*Willis Fastnacht Manges, Philadelphia
Francis Alphonso Mantz, Philadelphia
Vincent Marcucci, Philadelphia
Collier Ford Martin, Philadelphia
*Edward Martin, Philadelphia
Wallace Marsh Martin, Philadelphia
Frank Smeeton Matlack, Philadelphia
John Peter Maus, Philadelphia
John E. Medley, Philadelphia
Theodore Melnick, Philadelphia
Henry Garrett Memson, Philadelphia
Thomas Orville Menees, Philadelphia
†Samuel A. S. Metheny, Philadelphia
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Julian Erderich Meyer, Philadelphia
Henry B. Mickelberg, Philadelphia
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Robert Lee Miller, Philadelphia
Thomas Grier Miller, Philadelphia
Thomas Davis Mills, Philadelphia
†George S. Mintzer, Philadelphia
Albert Graeme Mitchell, Philadelphia
†Charles Franklin Mitchell, Philadelphia
Geo. Washington Mitchell, Philadelphia
†Charles M. Montgomery, Philadelphia
Allen G. Moore, Philadelphia
Charles H. Moore, Philadelphia
Edward Kemp Moore, Philadelphia
Eugene Aloysius Moore, Philadelphia
John Edward Moore, Philadelphia
†Philip Henry Moore, Philadelphia

Stirling Walker Moorehead, Philadelphia
†Arthur Carados Morgan, Philadelphia
Marshall Blair Morgan, Philadelphia
Samuel M. J. Morris, Philadelphia
William Francis Morrison, Philadelphia
Percy Daniel Moulton, Philadelphia
William Peter Mull, Philadelphia
†George Paul Müller, Philadelphia
Donald Munro, Philadelphia
Eugene Clement Murphy, Philadelphia
James Gordon Murfin, Philadelphia
John Herr Musser, Philadelphia
*Charles Francis Nassau, Philadelphia
John Jennette Neal, Philadelphia
William Steel Newcomet, Philadelphia
†Arthur Newlin, Philadelphia
†George W. Norris, Philadelphia
Philip Norris, Philadelphia
Charles Quay North, Philadelphia
John Patrick O'Brien, Philadelphia
Thomas Ignatius O'Drain, Philadelphia
†Herbert Old, Philadelphia
Abraham E. Oliensis, Philadelphia
Joseph Francis O'Neill, Philadelphia
Charles Aloysius O'Reilly, Philadelphia
Timothy M. O'Rourke, Philadelphia
†Alfred James Ostheimer, Philadelphia
Maurice Ostheimer, Philadelphia
Herman William Ostrum, Philadelphia
George W. Outerbridge, Philadelphia
Hubley Raborg Owen, Philadelphia
†Francis Randolph Packard, Philadelphia
Henry Khunrath Pancoast, Philadelphia
Edward Augustus Parker, Philadelphia
Robert E. Parrish, Philadelphia
†Ross V. Patterson, Philadelphia
Clarence Anderson Patton, Philadelphia
Gordie C. Patton, Philadelphia
John Davis Paul, Philadelphia
William C. T. Paulson, Philadelphia
Ralph Pemberton, Philadelphia
Oliver H. Perry Pepper, Philadelphia
*William Pepper, Philadelphia
John Douglas Perkins, Jr., Philadelphia
Joseph Ashbridge Perkins, Philadelphia
Joseph Anthony Pessolano, Philadelphia
Frederick Chalfonte Peters, Philadelphia
William Francis Peters, Philadelphia
*Damon Beckett Pfeiffer, Philadelphia
†Horace Phillips, Philadelphia
Harry Leon Picard, Philadelphia
George Morris Piersol, Philadelphia
Albert Pilkington, Philadelphia
George Platt Pilling, Jr., Philadelphia
Edmund Brown Piper, Philadelphia
Michael Platt, Philadelphia
William Charles Pontius, Philadelphia
Eli Herman Porch, Philadelphia
Joseph Walter Post, Philadelphia
Marion Henderson Powers, Philadelphia
†George Elmer Price, Philadelphia
†Linnæus Hodgson Prince, Philadelphia
Walter William Propst, Philadelphia
William O. H. Prosser, Philadelphia
John Purdy, Philadelphia
George Morehouse Purves, Philadelphia
William Elkin Raken, Philadelphia
Frank McCracken Ramsey, Philadelphia
Alexander Randall, Philadelphia
Edward Randall, Jr., Philadelphia
Howard Reed, Philadelphia
Robert Pierson Regester, Philadelphia
†Martin Emil Rehfuss, Philadelphia
Stanley Philip Reimann, Philadelphia
Eugene Gottfried Reinartz, Philadelphia
Sidney Joseph Repplier, Philadelphia
Charles Barnett Reynolds, Philadelphia
*John H. W. Rhein, Philadelphia
Solon Lafayette Rhode, Philadelphia
Russell Richardson, Philadelphia
David Riesman, Philadelphia
Walter Bright Rile, Philadelphia
Benjamin Robinson, Philadelphia
George Ernest Robinson, Philadelphia
†John Augustus Roddy, Jr., Philadelphia
Edwin William Rodenheiser, Philadelphia
†John S. Rodman, Philadelphia
Nathaniel F. Rodman, Philadelphia
William Garrison Roe, Philadelphia
Henry Frank Roepke, Philadelphia
Leevon Mose Rogers, Philadelphia
George Gorgas Rose, Philadelphia
Philip S. Rosenblum, Philadelphia
Robert William Rubin, Philadelphia
James T. Rugh, Philadelphia
William Ruoff, Philadelphia
Eugene Rush, Philadelphia
†Carlton Nelson Russell, Philadelphia
Jacob James Rutberg, Philadelphia
†William Cyril Ryan, Philadelphia
William John Ryan, Philadelphia
*Joseph Sailer, Philadelphia
William Charles Samuel, Philadelphia
Edward Stanton Saylor, Philadelphia
Hunter Watt Scarlett, Philadelphia
Frederick Morris Schaefer, Philadelphia
Charles Solomon Schafer, Philadelphia
Leroy Allen Schall, Philadelphia
Robert Avrom Schless, Philadelphia
Truman Gross Schnabel, Philadelphia
Frank William Schwarz, Philadelphia
*George E. de Schweinitz, Philadelphia
Louis Segal, Philadelphia
Morris Segal, Philadelphia
Joseph Dallas Seiberling, Philadelphia
James Stuart Seitz, Philadelphia
Charles Emory Gould Shannon, Phila.
Francis Patrick Shannon, Philadelphia
Hugh Murdock Shannon, Philadelphia
Morris Samuel Shapiro, Philadelphia
Abraham Maxwell Sharpe, Philadelphia
John Preston Sharpe, Philadelphia
Percy Howland Shaw, Philadelphia
William Ker Shea, Philadelphia
Philip Atlee Sheaff, Philadelphia
Lawrence Shields, Philadelphia
William Smith Shimer, Philadelphia
†William Toy Shoemaker, Philadelphia
John Theron Short, Philadelphia
Furman Robbins Shute, Philadelphia
James S. Simmons, Philadelphia
Marshal Wray Sinclair, Philadelphia
Samuel Singer, Philadelphia
*Elijah H. Siter, Philadelphia
Allen Walters Sivyer, Philadelphia
*Ross Hall Skillern, Philadelphia
Samuel Ruff Skillern, Jr., Philadelphia
Alexis Dupont Smith, Philadelphia
*Allen J. Smith, Philadelphia
†Arthur Donaldson Smith, Philadelphia
Charles Deaver Smith, Philadelphia
Edwin Dargan Smith, Philadelphia
Frederic Warren Smith, Philadelphia
James Augustus Smith, Philadelphia
*Seth MacCuen Smith, Philadelphia
William Henley Smith, Philadelphia
Henry Snow, Jr., Philadelphia
Harry Bismarck Sobernheimer, Phila.
Caleb William Sommerville, Philadelphia
†Louis A. Spaeth, Philadelphia
†Richard Rockefeller Spahr, Philadelphia
John Speese, Philadelphia
Israel Speirs, Philadelphia
Horace Evans Spruance, Philadelphia
Samuel Stalberg, Philadelphia
Camille Joseph Stamm, Philadelphia
Edward Austin Steinhilber, Philadelphia
*Alfred Stengel, Philadelphia
*Ernest Jackson Steves, Philadelphia
†Charles M. Stiles, Philadelphia
Francis Augustus Stiles, Philadelphia
Mitchell Porter Stiles, Philadelphia
Cheney M. Stimson, Philadelphia
Carl Stoepler, Philadelphia
Earle Bigham Stokes, Philadelphia
William Hoy Stoner, Philadelphia
*Philip Samuel Stout, Philadelphia
Edward Adams Strecker, Philadelphia
William Daniel Stroud, Philadelphia
Charles M. Strotz, Philadelphia
Asbury Clarke Stroup, Philadelphia
Frederick George Stubbs, Philadelphia
William Blaine Swartley, Philadelphia
*Joshua Edwin Sweet, Philadelphia
†William M. Sweet, Philadelphia
Charles Hill Tait, Philadelphia
James E. Talley, Philadelphia
Isaac Samuel Tassman, Philadelphia
†William Johnson Taylor, Philadelphia
Alfred Robert Thomas, Jr., Philadelphia
Frank Wister Thomas, Philadelphia
†Thomas Turner Thomas, Philadelphia
*William H. Thomas, Philadelphia
Morris Clayton Thrush, Philadelphia
Arthur Rudolph Timme, Philadelphia
James Francis Tompkins, Philadelphia
Abraham Trasoff, Philadelphia
Philip Adam Trau, Philadelphia
†Henry Tucker, Philadelphia
Stephen W. Tunnell, Philadelphia
Joseph Turner, Philadelphia
George Fay Twoddel, Philadelphia
Ralph McGuide Tyson, Philadelphia
Everett Allen Tyler, Philadelphia
Harry Edward Ungerleider, Philadelphia
Clair F. Vale, Philadelphia
William W. Van Dolsen, Philadelphia
William Van Korb, Philadelphia
Junius R. Vann, Jr., Philadelphia
†William Turner Van Pelt, Philadelphia
†Norris Wister Vaux, Philadelphia
Herschel Carey Walker, Philadelphia
Thomas Holmes Walker, Philadelphia
†Warren Walker, Philadelphia
George Bush Walp, Philadelphia
†William Henry Walsh, Philadelphia
Rudolph Albert Walther, Philadelphia
William Newbold Watson, Philadelphia
Charles Channing Watt, Jr., Philadelphia
Charles Henry Weber, Philadelphia
Stephen Dana Weeder, Philadelphia
Theodore H. Weisenburg, Philadelphia
Edward Weiss, Philadelphia
William Weiss, Philadelphia
John Murray Welch, Philadelphia
James Ralston Wells, Philadelphia
John Wilson West, Philadelphia
Harold Flavell Westcott, Philadelphia
William Francis Whelan, Philadelphia
William Whitaker, Philadelphia
Courtland Yardley White, Philadelphia
Howard King White, Philadelphia
John Alfred White, Philadelphia
Louis Russell Wiley, Philadelphia
†DeForest Porter Willard, Philadelphia
Horace James Williams, Philadelphia
Philip Francis Williams, Philadelphia
Ernest Gotshall Williamson, Philadelphia
Harry Bond Wilmer, Philadelphia
Harry Leigh Willson, Philadelphia
George Wilson, Philadelphia
†James Cornelius Wilson, Philadelphia
Samuel Milliken Wilson, Philadelphia
Sydney Louis Wingrade, Philadelphia
Karl David Winter, Philadelphia
Paul Carl Wittman, Philadelphia
John Bloss Wolfe, Philadelphia
Michael M. Wolfe, Philadelphia
†Charles Christian Wolferth, Philadelphia
†Alfred Conrad Wood, Philadelphia
George B. Wood, Philadelphia
†George Yerkes Woodland, Philadelphia
Samuel W. Woodhouse, Jr., Philadelphia
Arthur Roy Woods, Philadelphia
John Hayes Woolridge, Philadelphia
*Arthur Wells Yale, Philadelphia
Charles Houston Young, Philadelphia
Paul T. Young, Philadelphia
Myron Albert Zacks, Philadelphia
Arthur John Zimlich, Philadelphia
Jay Donald Zulick, Philadelphia

POTTER COUNTY

Philip Luther Hatch, Coudersport
Ross H. Jones, Coudersport
Robert Wayne Richards, Shinglehouse

SCHUYLKILL COUNTY

Gouverneur H. Boyer, Pottsville
†William Henry Clewell, Coaldale
John Joseph Dailey, McAdoo
Michael George Dewey, Girardville
John Joseph Donohue, Frackville
Thomas Lawrence Doyle, Tremont
Ivor David Fenton, Mahanoy City
Arthur Bowles Fleming, Tamaqua
†Alexander Liddell Gillars, Pottsville
James B. Heller, Pottsville
John Louis Hoffman, Ashland
†Maurice C. James, Fountain Springs
†William J. Monaghan, Girardville
John Joseph Moore, Pottsville
Leo Thomas Mullahey, Shenandoah
John Timothy Murphy, Pottsville
George A. Parker, Pottsville
Charles Edward Peach, Pine Grove
Francis Michael Quinn, Minersville
†George O. Oscar Santee, Cressona
Lewis Mayer Shultz, Pottsville
Arthur Elmer Simonis, Tremont
John George Striegel, Pottsville
Joseph Harrison Wyatt, Mahanoy City

SNYDER COUNTY

Elmer Raymond Decker, Selinsgrove
Dwight Elmer Long, Freeburg
John William Thompson, Selinsgrove

SOMERSET COUNTY

Maurice Victor Brant, Cairnbrook
James Earl Dull, Somerset
John H. R. Hemminger, Somerset
†Snyder John Henry Louther, Somerset
Wallace Roy McClellan, Garrett
Bart James Smith, Windber

SULLIVAN COUNTY

James Joseph O'Connor, Mildred
Theodore Wright, Dushore

SUSQUEHANNA COUNTY

Arthur John Denman, Susquehanna
Frank Harris Gardner, Montrose
William Edwin Park, New Milford
Thomas Oliver Williams, Brooklyn

TIOGA COUNTY

Francis S. Bodine, Wellsboro
John Horton Doane, Mansfield
Fay K. Field, Wellsboro
†Edward McIntyre Haley, Blossburg
Elmer John Presper, Lawrenceville

VENANGO COUNTY

Paul Lencir Brunner, Oil City
Elmer Llewellyn Dickey, Oil City
James Eugene Dwyer, Polk
Edward Glenn Henry, Oil City
Norman Stewart Reed, Polk
Audley Weller Ricketts, Franklin
Philip Joseph Sheridan, Oil City
Ardus Clair Thompson, Franklin
Edgar Vance Thompson, Franklin
Clyde E. Tibbens, Franklin

WARREN COUNTY

Edwin Study Africa, Warren
George M. B. Bradshaw, Sugar Grove
†William Patrick Clancy, Warren
George Smith Condit, Warren
Emory Low Dravo, Warren
Alan Daniel Finlayson, Warren
Franklin Gregg Haines, Warren
Roy Clark Meals, Columbus
Melbourne Jabez Pond, Warren
Paul Bryant Stewart, Warren
Frank Camden Willard, Clarendon

WASHINGTON COUNTY

Harry Francis Bailey, Monongahela
†David Major Bell, Canonsburg
William G. Berryhill, Washington
Emmett Black, Bentleyville
James Lennon Brennan, Washington
F. Floyd Cobb, Marianna
Howard L. Farquhar, W. Brownsville
Torrance John Hanlon, Donora
George Kennedy Hays, Monongahela
Esten Luellen Hazlett, Canonsburg
Elbin Jordan Johnson, Claysville
Samuel Alden Kamerer, Ellsworth
Frank Leslie Knox, Claysville
John Joseph Kolski, Donora
Thomas L. McCullough, McDonald
Edwin McKay, Charleroi
Elmer O'Neill Peterson, Monongahela
Homer Persell Prowitt, Washington
†Harry Joseph Repman, Charleroi
Perry Clare Smith, Vestaburg
Richard Austin Stewart, Washington
†William S. Stewart, McDonald
Porter Morrison Wall, Monongahela

WAYNE COUNTY

Ernest William Downton, Starrucca
Frederick Anthony Lobb, Hawley
†William Thomas McConvill, Honesdale
Oscar James Mullen, Hamlin

WESTMORELAND COUNTY

Nicholas Ernest Abbaticchio, Latrobe
†Ray M. Alexander, Bolivar
Charles D. Ambrose, Ligonier
John Steel Anderson, Greensburg
*Louis John Carrick Baily, Greensburg
Hugh Baily Barclay, Greensburg
Arthur Bryon Blackburn, Latrobe
Walter M. Bortz, Greensburg
†John Lewis Burkholder, Mt. Pleasant
William St C. Campbell, Seward
Thomas Porter Cole, Greensburg
Ralph Edmund Conn, Monessen
William Armor Copeland, Vandergrift
Charles C. Crouse, Derry
Charles Callery Croushore, Greensburg
Howard Bassett Emerson, Yukon
David Clifford Farquhar, Monessen
Martin Wesley Freas, United
Charles Archie Goble, Jeannette
John Walter Goodsell, New Kensington
†Samuel Brown Gray, Scottdale
David Ernest Griffith, Scottdale
Robert Jones Hunter, Greensburg
†William David Hunter, Monessen
Frank Clark Katherman, Whitney
Adam Seanor Kepple, Hannastown
Norwin Lester Kerr, Scottdale
George L. Kreiger, New Kensington
Floyd D. Lohr, Derry
Thomas E. McConnell, New Kensington
Claude Worth McKee, Greensburg
George T. McNish, Alverton
William Alfred Marsh, Mt. Pleasant
Wesley W. Miller, Jeannette
Thomas Wesley Moran, Latrobe
Dennis Ray Murdock, Greensburg
Stephen William Nealon, Latrobe
William Patrick Nolan, New Kensington
Bert Frank Ober, Latrobe
Irwin Joseph Ober, Greensburg
Carl Freeman Pierce, Greensburg
Elmer Noah Piper, New Kensington
Frank Milton Pogue, Trafford
Charles Henry Poole, Ruffsdale
William Joseph Potts, Greensburg
Urban Henry Reidt, Jeannette
Charles Robert Reiners, Greensburg
Clarence Glenn Robinson, Jeannette
Thomas St. Clair, Latrobe
Lee Monte Sankey, Jeannette
James Adams Schurgot, Monessen
James Willard Silliman, Bradenville
John Johnston Singer, Greensburg
Charles McLaughlin Sloan, Madison
Frank Edwin Smith, New Kensington
J. F. M. Snyder, New Kensington
Harry Joseph Stockberger, Claridge
†David Owen Thomas, New Kensington
Lauren Clay Thomas, Latrobe
David Allison Walker, Southwest
Joseph Harry Watson, Jeannette
†Arthur Raymond Wilson, Monessen
Leyden F. Wilson, New Kensington
Robert Lewis Wilson, Jeannette
Samuel Shearer Wright, Pleasant Unity

WYOMING COUNTY

Van Cleft Decker, Nicholson
Asa Lee Hickok, Meshoppen
James Hale Paul, Laceyville
Harvey Oscar Rohrbach, Mill City

YORK COUNTY

John Henry Bennett, York
Stewart Cole Bowers, New Freedom
William L. Crawford, Dillsburg
Oscar Artus Delle, York New Salem
Herman Harry Farkas, York
*John Gilbert, York
Harry Malcolm Head, York
Curtis John Hamme, Dover
Robert Edmund Lau, York
Jeremiah F. Lutz, Glen Rock
Frank Vance McConkey, York
Charles Henry May, York
†Edmund Webster Meisenhelder, York
Pius Albertus Noll, Glen Rock
Edgar Ranson Park, York
Brantley Fuller Parker, York
David Calbene Posey, Parke
Samuel Winchester Reeves, Fawn Grove
Sylvia Jeremiah Roberts, Goldsboro
Arthur Blair Shatto, York
Gibson Smith, York
Henry David Smyser, York
James Elwood Throne, York
Louis Schneider Weaver, York
Francis Roman Wise, York

Medical Officers of the U. S. Naval Reserve Force

ALLEGHENY COUNTY

Charles H. Aufhammer, Pittsburgh
Verner B. Callomon, Pittsburgh
Waid E. Carson, Pittsburgh
Nelson H. Clark, Pittsburgh
Robert M. Entwisle, Pittsburgh
Christopher C. Gardner, Braddock
John F. McCullough, Pittsburgh
Harold A. Miller, Pittsburgh
Stephen R. Mills, Braddock
John S. Plumer, Emsworth
Donald Rafferty, Pittsburgh
John C. Roe, Pittsburgh
Karl McC. Scott, Pittsburgh

CAMBRIA COUNTY

Charles M. Glassmire, Carrolltown

CLARION COUNTY,

Elmer G. Texter, Monroe

DELAWARE COUNTY

Percival M. Kerr, Elwyn
William F. Moore, Llanerch
Alfred G. Tinney, Morton

HUNTINGDON COUNTY

Howard LeRoy Dovey, Dudley

LUZERNE COUNTY

Joseph V. Connole, Wilkes-Barre
Joseph W. Zigmand, Wilkes-Barre

LYCOMING COUNTY

Robert K. Rewalt, Williamsport

MONTGOMERY COUNTY

Barton K. Thomas, Pottstown
Walter A. Yeakle, Norristown

PHILADELPHIA COUNTY

Frederick S. Baldi, Philadelphia
James B. Bert, Philadelphia
James D. Blackwood, Philadelphia
Russell S. Boles, Philadelphia
Harris M. Carey, Philadelphia
Eugene A. Case, Philadelphia
Frank M. Cleveland, Philadelphia
Harry D. Conley, Philadelphia
John C. DaCosta, Philadelphia
Judson Daland, Philadelphia
Francis J. Dever, Philadelphia
George A. Enion, Philadelphia
Charles J. Fries, Philadelphia
William D. Hall, Philadelphia
Wilfred W. Hawke, Philadelphia
Hobart A. Hare, Philadelphia
Jacob L. Herman, Philadelphia
William Hewson, Philadelphia
Franklyn C. Hill, Philadelphia
Richard F. Hill, Philadelphia
Thomas B. Holloway, Philadelphia
Joseph C. Keller, Philadelphia
Thomas M. Kelly, Philadelphia
William F. Kennedy, Philadelphia
Richard A. Kern, Philadelphia
Robert G. LeConte, Philadelphia
Paul A. Lewis, Philadelphia
W. Newton Long, Philadelphia
Horace G. Longaker, Philadelphia
B. B. Vincent Lyon, Philadelphia
John A. McCormick, Philadelphia
Francis J. McCullough, Philadelphia
John A. McGlinn, Philadelphia
Grayson P. McCouch, Philadelphia
David G. Metheny, Philadelphia
Morris B. Miller, Philadelphia
Gilbert M. Newburger, Philadelphia
Benjamin D. Parish, Philadelphia
George G. Ross, Philadelphia
James E. Scheehle, Philadelphia
Charles Schwinn, Philadelphia
Ellis M. Spoont, Philadelphia
Edwin G. Stork, Philadelphia
Ross H. Thompson, Philadelphia
Floyd G. Tindall, Philadelphia
Joseph J. Toland, Jr., Philadelphia
J. Hart Toland, Philadelphia
John A. Topper, Philadelphia
Eugene W. Torrey, Philadelphia
William P. Vail, Philadelphia

SCHUYLKILL COUNTY

Frank H. Cantlin, Fountain Springs

YORK COUNTY

Robert D. Hostetter, York
William H. Schellmacher

Addresses Not Known to Journal

Frank H. Cantlin
Harrie M. Carey
Martin J. Costello
Harry W. Croop
Philip H. Decker
Charles L. Fackler
Robert D. Hostetter
George F. Kelly
William P. Mull
Samuel Z. Myers
Richard Owen
William H. Schellhamer
Edwin G. Stork
Elmer G. Texter
Eugene W. Torrey
Otto von Huffman
Frank D. Werner

LIST OF ADVISORY BOARDS THROUGHOUT STATE OF PENNSYLVANIA AND NAME OF CHAIRMAN OF EACH BOARD

ALTOONA

Altoona Hospital—Dr. Orr H. Shaffer, 1116 12th Ave.

BELLEFONTE

Bellefonte Hospital—Dr. J. L. Seibert.

BETHLEHEM

St. Luke's Hospital—Dr. W. L. Estes, St. Luke's Hospital.

BLOSSBURG

State Hospital—Dr. W. A. DeWitt, State Hospital.

BRYN MAWR

Bryn Mawr Hospital—Dr. Walter Chrystie, Morris Ave.

CHESTER

Chester Hospital—Dr. D. W. Jefferis, 328 Broad St.

COALDALE

State Hospital—Dr. E. E. Shifferstine, State Hosp.

DANVILLE

Geisinger Hospital—Dr. H. L. Foss, Geisinger Hosp.

DUBOIS

Dubois Hospital—Dr. J. C. Sullivan.

EASTON

Easton Hospital—Dr. H. D. Michler, 134 North 3d St.

ERIE

Hamot Hospital—Dr. T. Palmer Treadway, 147 West 8th St.

HAZLETON

State Hospital—Dr. Walter Lathrop, State Hosp.

HARRISBURG

Harrisburg Hospital—Dr. Frederick W. Coover, 223 Pine St.

Johnstown Memorial Hospital—Dr. George W. Wagoner, 435 Franklin St.

LANCASTER

Lancaster General Hospital—Dr. F. G. Hartman, 136 North Duke St.

PHILADELPHIA

Episcopal Hospital—Dr. H. C. Deaver, 1701 Spruce St.

Germantown Hospital—Dr. A. D. Whiting, 1523 Spruce St.

Jefferson Hospital—Dr. Thomas McCrae, 1627 Spruce St.

Jewish Hospital—Dr. Bernard Kahn, 1516 North 15th St.

Hahnemann Hospital—Dr. W. B. VanLennep, 1421 Spruce St.

Lankenau Hospital—Dr. Henry F. Page, 315 South 16th St.

Orthopedic Hospital—Dr. Morris J. Lewis, 1316 Locust St.

St. Agnes Hospital—Dr. Joseph P. Walsh, 2026 Chestnut St.

St. Timothy's Hospital—Dr. M. Howard Fussell, 421 Lyceum Ave., Rxb.

Samaritan Hospital—Dr. William Egbert Robinson, 327 South 17th St.

University of Pennsylvania Hospital—Dr. Edward Martin, 1506 Locust St.

PITTSBURGH

Allegheny General Hospital—Dr. James P. McKelvy, 519 North Highland Ave.

Mercy Hospital—Dr. John J. Buchanan, 1409 North Highland Ave.

St. Francis Hospital—Dr. Thomas Grier Simonton, 5321 5th Ave.

Western Pennsylvania Hospital—Dr. Markley C. Cameron, 344 South Fairmount Ave.

POTTSVILLE

Pottsville Hospital—Dr. George H. Halberstadt, 218 Market St.

READING

Reading Hospital—Dr. W. S. Bertolet, 233 North 6th St.

SAYRE

Robert Packer Hospital—Dr. Donald Guthrie.

SHAMOKIN

State Hospital—Dr. George W. Reese, State Hosp.

SCRANTON

State Hospital—Dr. Charles Falkowsky, Jr., 411 Olive St.

UNIONTOWN

Uniontown Hospital—Dr. J. S. Hackney, 36 West Church St.

WEST CHESTER

Chester County Hospital—Dr. U. Grant Gifford, Chester County Hospital.

WILKES-BARRE

Mercy Hospital—Dr. August Trapold, 239 South Washington St.

Wilkes-Barre City Hospital—Dr. Charles H. Miner, 115 South Franklin St.

WILLIAMSPORT

Williamsport Hospital—Dr. Horace G. McCormick, 430 West 4th St.

WINDBER

Windber Hospital—Dr. W. S. Wheeling.

YORK

York Hospital—Dr. G. E. Holtzapple, 203 South George St.

NAVY'S CALL FOR BINOCULARS, SPY-GLASSES AND TELESCOPES: "THE EYES OF THE NAVY"

Navy Department, Assistant Secretary's Office
Washington, D. C., Jan. 21, 1918.

To the Editor:—The Navy is still in urgent need of binoculars, spy-glasses and telescopes. The use of the submarine has so changed naval warfare that more "eyes" are needed on every ship, in order that a constant and efficient lookout may be maintained. Sextants and chronometers are also urgently required.

Heretofore, the United States has been obliged to rely almost entirely on foreign countries for its supply of such articles. These channels of supply are now closed, and as no stock is on hand in this country to meet the present emergency, it has become necessary to appeal to the patriotism of private owners to furnish "eyes for the navy."

Several weeks ago, an appeal was made through the daily press, resulting in the receipt of over 3,000 glasses of various kinds, the great majority of which has proven satisfactory for naval use. *This number, however, is wholly insufficient, and the Navy needs many thousands more.*

All articles should be securely tagged, giving the name and address of the donor, and forwarded by mail or express to the Hon. Franklin D. Roosevelt, Assistant Secretary of the Navy, care of Naval Observatory, Washington, D. C., so that they may be acknowledged by him.

Articles not suitable for naval use will be returned to the sender. Those accepted will be keyed, so that the name and address of the donor will be permanently recorded in the Navy Department, and every effort will be made to return them, with added historic interest, at the termination of the war. It is, of course, impossible to guarantee them against damage or loss.

As the Government cannot, under the law, accept services or material without making some payment therefor, one dollar will be paid for each article accepted, which sum will constitute the rental price, or, in the event of loss, the purchase price, of such article.

Very sincerely yours,
Franklin D. Roosevelt,
Assistant Secretary of the Navy.

STATE NEWS ITEMS

MARRIED

Dr. Samuel B. Geise and Mrs. Cordelia Clark, both of Sunbury, December 23.

Dr. George Cresswell Davis and Miss Nellie Bound, both of Milton, December 1.

Dr. Clifford Cooper, Cooperstown, and Miss Clara Nesbit, Franklin, at Pittsburgh, January 2.

Dr. Charles Northmore Sturtevant, Frankford, Philadelphia, and Miss Martha Irvine, Mercersburg, at Frankford, December 8.

DIED

Dr. Henry Bidlack Reed (Univ. of Pennsylvania, '73) in Milford, January 1, aged 67.

Dr. John Edward Beck (Univ. of Pennsylvania, '93) of Clarion, in Warren, December 6, aged 54.

Dr. William H. King (Jefferson Med. Coll., '70) of Derry, in Wilkinsburg, December 5, aged 68.

Dr. Morris Hughes (Hahnemann Med. Coll., Philadelphia, '84) in Kennett Square, January 1, aged 64.

Dr. James Newell Bemis (Bellevue Hosp. Med. Coll., New York, '70) in West Middletown, December 23, aged 72.

Dr. James Joseph Mullen (Univ. of Wooster, Cleveland, '84) of Perrysville, in Pittsburgh, December 17, aged 67.

Dr. Charles W. Hoyt (Cleveland Univ. of Med. and Surg. '70) in Sharon, December 16, from heart disease, aged 78.

Dr. Daniel P. Maddux (Hahnemann Med. Coll. and Hosp., Philadelphia, '83) in Chester, January 3, from pneumonia, aged 55.

Dr. William Joseph Hearn (Jefferson Med. Coll., '67) of Philadelphia, in Media, December 21, from pneumonia, aged 74.

Dr. John Calvin Cummings (Univ. of Maryland, Baltimore, '84) in Harrisburg, from cerebral hemorrhage, November 6, aged 63.

Dr. Charles Martin (Univ. of Pennsylvania) of Millmont, in Mauch Chunk, recently from hemorrhages superinduced by kidney trouble.

Dr. Samuel Hastings Brown (Hahnemann Med. Coll., Philadelphia, '69) in Philadelphia, November 21, from cerebral hemorrhage, aged 72.

Dr. Evan Jeffries H. Hackney (Hahnemann Med. Coll., Philadelphia, '93) in Philadelphia, December 22, as the result of a nervous breakdown, aged 56.

Dr. Christian F. Tegtmeier (Hahnemann Med. Coll., Philadelphia, '95) in Conshohocken, December 26, from disease of the liver, aged 54.

Dr. Rollen L. Shinnaberry (Jefferson Med. Coll., '10) in Scranton, December 10, from the effects of a gunshot wound inflicted by the husband of a patient, aged 30.

ITEMS

Dr. Ellwood R. Kirby, Philadelphia, has been appointed physician to the Eastern State Penitentiary of Pennsylvania.

The Altoona Hospital, Altoona, is the recipient of a bequest of $50,000 by the will of Mrs. Harriet Prevost of Philadelphia.

Dr. Oliver C. Heffner, Pottstown, recently received severe burns of the face and hands while pouring an antifreezing solution into his automobile.

Measles.—There were said to be seventy-five cases of measles in the State Soldiers' Orphans' Industrial School at Scotland, Franklin County, on January 3.

Dr. Samuel G. Dixon was reelected for the twenty-second consecutive time president of the Philadelphia Academy of Natural Science, at the annual meeting, December 18.

Dr. H. Bernard Cohen has been appointed director of Philadelphia School Medical Inspectors, to succeed Dr. Walter S. Cornell, who resigned to enter military service.

The Medical Society of Franklin County at its annual session held a short business meeting followed by a banquet dinner at which much jolly good sociability prevailed.

Smallpox is quite prevalent, cases being reported in thirteen counties of the state. A number of the cases have been traced directly to Ohio, Michigan and other western states.

Dr. John T. Harbold, Dallastown, was seriously injured while making a call at 3 o'clock on the morning of January 17, when his automobile skidded, upset, pinning him underneath.

The Pennsylvania Hospital Unit, formerly known as Hospital Unit No. 10 and established near the Allies' front in France, has been named Base Hospital No. 16, Philadelphia, U. S. A.

Dr. James R. Ewing, Delmont, who is 74 years of age, and graduated in medicine in 1870, was the first member to pay his 1918 dues to the Westmoreland County Medical Society. His receipt was dated Dec. 4, 1917.

Strange Malady.—Up to January 10 more than 500 persons had been ill in Wilkes-Barre and vicinity with what some call "winter cholera." Notice has been given that the water should be boiled as a precautionary measure.

DR. WALTER LATHROP, Hazleton, chairman of the Advisory Medical Board of Hazleton, announces that he will perform any operations needed by drafted men to correct physical defects which can be remedied by use of the knife.

MAJOR RICHARD H. HARTE, Medical Director of Pennsylvania Base Hospital Unit No. 10, which went to France last spring, had a bad fall in December, with fracture of two of his ribs. While convalescing in Paris he met Drs. de Schweinitz and Le Conte.

CHINESE PHYSICIAN FOUND GUILTY.—Dr. Jin Fuey Moy, Arnold Staley, John Staley and John C. Larkin, officers of the Fleming Drug Company, Pittsburgh, were on December 26 found guilty in the Federal Court of violating the Harrison Antinarcotic Act, after a jury had deliberated six hours.

MORE BIRTHS THAN DEATHS.—Pennsylvania had over 10,000 more births than deaths during the month of September, according to the vital and mortuary statistics. The number of births was 20,072, an unusually high figure, while deaths were 9,953. One fifth of the deaths were of children under 2 years of age.

DR. N. C. KARTUB, Lyndora, Butler County, pleaded guilty on December 28, to second degree murder and conspiracy to defraud a life insurance company, and was sentenced the following day to serve not less than nineteen years and ten months, nor more than twenty years, in the Western Penitentiary, on the charge of murder, and two years on the conspiracy charge, and to pay a fine in the two cases of $2,000.

CORRECTION.—In the December News Items the announcement was made of the marriage of Dr. John C. Reed, Duquesne. The item was taken from another journal. The Dr. John C. Reed whose marriage was thus announced is a dentist of Harrisburg.

THE DANVILLE STATE HOSPITAL inmates, who became auxiliary members of the Red Cross, have contributed almost 45,000 articles since being organized last May, including 127 sweaters, 186 pairs of socks, 30 pairs of wristlets, 13 helmets, 9 scarfs and also bathrobes, surgeons' gowns, bed shirts, and thousands of surgical dressings.

DR. O. R. ALTMAN, president of the Fayette County Medical Society, tendered his county society a complimentary dinner at the time of their December meeting. In addition to seventy-five members there were present Drs. K. I. Sanes and W. H. Mercur, Pittsburgh; Judge E. H. Reppert, W. C. McKean, Rev. A. M. Slayton, Dr. D. A. Chalfant and Dr. A. E. Coughanour, Uniontown; and Dr. L. R. Harrington, New Salem. The program began with a surgical clinic at 11 a. m. by Dr. Sanes, followed by a luncheon at the hospital for visiting members. There was a medical clinic at 2 p. m. by Dr. Mercur, and then the turkey dinner in the evening with addresses by Judge Reppert, Mr. McKean and Drs. Mercur and Sanes.

DR. JOSEPH P. REMINGTON, dean of the Philadelphia College of Pharmacy, died January 1, from heart trouble, aged 70. Dr. Remington was president of the first International Pharmaceutical Congress in 1893, chairman of the revision committee of the United States Pharmacopeia in 1910, author of a standard textbook, an organizer in 1878 of the Pennsylvania Pharmaceutical Association, its president in 1890, associate editor of the United States Dispensary and pharmaceutical editor of Lippincott's Medical Dictionary. His estate was valued at $189,475. A trust fund of $10,000 was provided for in his will, the income of which is to be paid to the Philadelphia College of Pharmacy, to be used in "assisting worthy and deserving students in the payment of their tuition fees."

ILLEGAL PRACTITIONER REFUSED A PARDON.—The most unusual case that has come before the Pardon Board in many months was up for consideration on December 20. It was that of L. L. Parry of Pittsburgh, now serving a six-month sentence, after being ordered also by the court to pay a fine of $1,250 for unlawful practice of medicine. The most extraordinary claims of the ability of Parry to cure blindness, cancer, liver and stomach complaints and virtually all the ills the human flesh is heir to were made by his counsel, Owen S. Creil of Pittsburgh, who asked for a pardon. Parry was sentenced April 19, 1917, but kept out of jail until December 5, by appealing his case to the Superior Court. The board, when it met in executive session, refused the application at once without discussion.

WILKES-BARRE TO RAISE MEDICINAL PLANTS.—The following is taken from the Philadelphia *Press* of January 16: "Medicinal plants, of which there is a shortage, are to be grown in the city greenhouses, the city authorities deciding today to use the beds for war purposes instead of growing flowers for city parks. Only a small number of hardy perennials will be grown. Herbs that are needed in the nation are to be grown in the city nursery, the trees of which will be removed as speedily as possible. The medicinal plants will be given to all persons who will guarantee their cultivation, the proceeds of any sale going to the growers. There are varieties of plants to be sown in the field and the city will furnish these seeds. The plants to be grown in the greenhouses are belladonna, digitalis and valerian. Those to be sown in the field are Indian hemp, caraway and henbane."

ANNUAL DUES REMITTED.—So far as reported to the state secretary the following county medical societies have voted to remit the dues for 1918 of members who are actually in the service of the United States and her Allies: Adams, Allegheny, Armstrong, Beaver, Bedford, Berks, Blair, Bradford, Cambria, Carbon, Clearfield, Clinton, Crawford, Cumberland, Dauphin, Delaware, Elk, Erie, Fayette, Franklin, Lancaster, Lycoming, Mercer, Mifflin, Montgomery, Northampton, Northumberland, Philadelphia, Somerset, Tioga, Wayne, Westmoreland, Wyoming and York. If other societies have voted to remit the dues of commissioned members in actual service, will the secretaries kindly so notify the state secretary. As the House of Delegates at Pittsburgh enacted that "the *per capita* assessment for 1918 for any member in the actual service of the United States or her Allies shall be remitted provided the annual dues are remitted by the county society" the income of the state society for 1918 will be lessened more than $4,000.

PENNSYLVANIA DIRECTORS OF THE POOR.—Plans for the codification of the nearly 800 separate poor laws of Pennsylvania were considered at the forty-third annual meeting of the Association of Directors of the Poor and Charities and Corrections at Johnstown, Oct. 15-18, 1917. The convention authorized the appointment of a committee to study the question and report at the meeting next year at Butler. As a result of a new law authorizing poor law officials to come at public expense the attendance at Johnstown was probably the largest in the long history of this association. One entire section was devoted to problems connected with county almshouse management. In the discussion it developed that there is an increasing sentiment against the separation of aged respectable couples when they are committed to the almshouse. Only about 13 per cent. of the boys paroled from the Huntingdon reformatory have violated parole, according to the statement of Supt. T. B. Patton at the session on county and state penal institutions. F. H. Nibecker of the Glen Mills school, and William F. Penn of the Morganza school, participated in the symposium on this subject. The president of the association, Oliver P. Bohler, made a plea for more effective work in the rural districts and remote localities. Albert P. Roderus of Pittsburgh is the new president and Edwin D. Solenberger of Philadelphia has been continued as secretary.

Polyclinic and University Merger Up to Court.—The following is clipped from the Public Ledger of December 28: With the filing of a petition by John C. Bell for a merger of the Philadelphia Polyclinic and College for Graduates in Medicine and the University of Pennsylvania Hospital in the Common Pleas Court yesterday, another step was taken toward forming a large postgraduate school of medicine in this city. There is no opposition, and the court is expected to file a decree of merger in a short time. The plan was made when the University of Pennsylvania and the Medico-Chirurgical Medical College merged about a year ago. The Carnegie and Rockefeller Foundations are expected to contribute financially when the consolidation is effected. The Polyclinic Hospital will be continued and the University of Pennsylvania will be the teaching department of the school. In the Polyclinic will be the clinical and dispensary departments. A large building is to be erected on Thirty-Third Street, facing the museum, as soon as the price of building materials reaches normal proportions. The city has paid the consolidated school about $1,000,000 in damages for the condemnation of the Medico-Chirurgical property on the Parkway, and this sum will be used to build the school. The present faculty of the Polyclinic Hospital will be retained for the present. With Europe war ridden, it is expected that physicians and surgeons will come from various countries to this city to complete their studies, instead of going to Paris, Berlin and Vienna, as they did heretofore.

GENERAL NEWS ITEMS

Dr. Thomas Davison Crothers, Hartford, Conn., died January 12, from arteriosclerosis, aged 75.

Dr. William S. Thayer, Baltimore, has returned after four months in Russia as a member of the Red Cross commission.

The Indianapolis Medical Society has undertaken to pay all dues, local and state, for its members who have gone to the service.

The Medical Women's War Service League of Denver, Colo., was recently organized by thirty-five medical women of Denver.

The Missouri State Medical Association now has an appointed acting president, the president and each of the three vice presidents being in active service.

Dr. Jane W. Craven, Evanston, Ill., head of a hospital unit equipped by citizens of Pittsburgh, has been decorated by the French Government with the Croix de Guerre.

Dr. Everett James McKnight, a member of the Board of Trustees of the American Medical Association, died suddenly at his home in Hartford, Conn., December 25, from angina pectoris, aged 62.

Drs. George H. Barber and Edward R. Stitt have been promoted from Medical Directors to the rank of Rear Admiral, in accordance with the act of Congress authorizing two additional rear admirals in the medical corps of the Navy.

United States Hospital in Japan.—The American Red Cross has accepted the offer of St. Luke's International Hospital at Tokio, Japan, to use its establishment in case need arises for its use by the military or naval forces of the United States.

Massachusetts Nurses. — Governor McCall on January 10 announced that commissions as second lieutenants in the State Guard would be issued to one hundred graduate nurses, comprising the first unit organized for emergency service.

A Drunken Medical Lieutenant has been dismissed from Pershing's army and sent back to the United States under guard, "convicted of drinking with enlisted men and disgracing the military service by being intoxicated while in uniform."

The Army Medical Museums is the title of a paper in the *Medical Record,* Oct. 20, 1917, by Major R. W. Shufeldt, M. C., U. S. Army (retired), which shows the need of an increased appropriation by Congress for the new museum building.

The Lakewood Hotel, Lakewood, N. J., has been taken over by the U. S. War Department and will be converted into a reconstruction hospital for wounded soldiers. Pending the arrival of patients, it will be used as a concentration point and training school for army nurses.

Women Nurses on Hospital Ships.—For the first time in American history women nurses are to be employed on hospital ships. The *Comfort* and the *Mercy* have been fitted with accommodations for three hundred patients each, and with special quarters for the women nurses.

Colonel Goodwin Returns to Great Britain.—Col. T. H. Goodwin, who since last May has been in the Surgeon-General's Office in Washington, representing the British Medical Service in this country, has returned to England. He will be succeeded by Lieut.-Col. C. K. Morgan, C. M. G.

Christian Scientist Brings Suit.—What is said to be the first suit ever brought by a Christian Science practitioner for the recovery of money alleged to be due for services rendered, was filed in New York, December 17, by Miss Grace M. Trankla against Clarence C. Burger, the sum claimed being $12,150.

Hospital Train Starts for France.—The first of six American hospital trains, which are being built in England, for service in France, started from London for American headquarters, December 31. The train consists of sixteen cars, and was built in less than eleven weeks, at the carshops of the Midland Railway at Derby.

Anti-Vivisectionists Sue the Red Cross.—Ten anti-vivisectionists who are members of the American National Red Cross, started proceedings in the United

States District Court, New York, January 12, to stop the organization from expending $100,000 for the medical staff of the United States Army in France to use for research work.

A Patriotic Meeting of the physicians of Trenton, N. J., and their families was held December 13, at which Dr. William W. Keen, Philadelphia, and Major Charles A. E. Codman, M. R. C., U. S. Army, Philadelphia, delivered addresses, and Major Henry D. Jump, Philadelphia, presented moving pictures on war conditions abroad and of cantonments in this country.

Hamstringing in the Army is the title of a forceful editorial in *The Journal of the A. M. A.* for January 5, which begins as follows: "The forces arrayed against scientific medicine are many and various. They range from the honest but deluded crank with an obsession through the various cults and 'pathies to the downright quacks and medical fakers."

Retired Naval Officers Recalled to Service.—Nearly five hundred officers of the Navy and 138 former officers, who resigned in past years to enter civil life, are now serving in the Fleet Naval Reserve. Among them are one retired surgeon general, three medical inspectors, six medical directors, eight surgeons, five past assistant surgeons, and four assistant surgeons.

Deaths of Physicians in 1917.—*The Journal of the A. M. A.* for January 5 reviews the reports of 2,300 deaths of physicians noted in that journal during 1917. The chief causes of death in the order named were senility, heart disease, cerebral hemorrhage, pneumonia, accidents, nephritis and surgical operations. The average age was 60 years, 8 months and 13 days.

Anesthetists Need Not Be Physicians. — An opinion given by the attorney general of Wisconsin to Dr. Oscar Lotz, Milwaukee, member of the medical board, December 17, states that "The giving of an anesthetic under the direction of a physician does not require the anesthetist to hold a medical license, and this practice is, therefore, not to be considered as a violation of the statute."

Death Rates in Large Cities.—The Bureau of the Census reports the following death rates (stillbirths excluded) reported during the week ending Dec. 15, 1917: Washington, D. C., 20.2; Memphis, Tenn., 19.9; Baltimore and Pittsburgh, 19.7; Toledo, Ohio, 19.6; Omaha, 19.3; New Haven, Conn., 19.2; Birmingham, Ala., 19; Cincinnati, 18.5; Louisville, Ky., 18.4 Philadelphia, 17.6; Spokane, Wash., 9.9; Portland, Ore., 8.8; Seattle, 8.1; Oakland, Calif., 6.1.

Hospital Ship Sunk.—The English Hospital Ship *Rewa* was torpedoed and sunk in the Bristol Channel on January 4, while on her way from Gibraltar. All the wounded were saved, but there were three casualties among the crew. The ship "was displaying all the lights and markings required by The Hague Convention. She was not and had not been within the so-called barred zone as delimited in the statement issued by the German Government on Jan. 19, 1917."

Church Attacks Medical Law.—Injunctions restraining Governor Stephens and other officials from enforcing the California medical practice act are asked in a suit filed in Washington, D. C., January 3, in the Supreme Court by representatives of the Church of the Spiritual Temple of Truth, who contend that the law is discriminatory and unconstitutional. The Board of Medical Examiners of California refused licenses to practice to L. E. Nickell and Robert J. Burke, ministers of that church.

Major Frank Billings, M. R. C., who was appointed medical adviser to the governor of the state of Illinois, in the creation of the medical advisory boards, and who has been acting in this capacity, is now relieved from this duty and assigned to the Provost Marshal General's Office, Washington, D. C. It is understood that Major Billings' work in Washington will be that of adviser to the Provost Marshal, in connection with the medical problems under the Selective Service Law. Major Billings will report in Washington, February 1.

Council on Pharmacy and Chemistry.—During December the following articles have been accepted for inclusion in New and Nonofficial Remedies: Chloramine-B (Calco), chloramine-T (Calco), dichloramine-T (Calco), halazone (Calco), Calco Chemical Co.; arsenobenzol (Dermatological Research Laboratories), 0.4 gm. ampules, Dermatological Research Laboratories, Philadelphia Polyclinic; novocaine, Farbwerke-Hoechst Co.; sterile solution coagulen-ciba (3 per cent.) 1.5 c.c. ampules and 20 c.c. ampules, tablets coagulen-ciba, 0.5 gm., A. Klipstein Co.

Thrift Stamps.—It is pointed out by the Treasury Department that Thrift Stamps are not made redeemable in cash for the reason that these stamps are simply intended as a convenient method for the small savers to accumulate enough to purchase War Savings Stamps, which bear interest and are redeemable in cash. In addition, to provide for redemption for these Thrift Stamps would involve such an amount of detailed accounting and labor and expense as to impair the practicability of their use. In fact, they would be more trouble and expense to the Government possibly than they are worth.

Proposed Ministry of Health in Great Britain. —Major Waldorf Astor read a paper before the British Royal Institute of Public Health, on Oct. 31, 1917. In discussing health problems he said: "The first thing required was a central department, and the second was the disentangling and straightening out of the spheres and functions of the 1,800 sanitary authorities, of the 630 boards of guardians, of the 238 local insurance committees, of the 318 local education authorities, and of the 320 new pension committees. He recommended the centralization of power, so far as the public health problem was concerned. They must have one health minister and not three ministers, or even two ministers. One head meant economy of time and effort, economy of man power and energy, economy of the taxpayers' and ratepayers' money."

Surveyor General Appointed for All U. S. Army Purchases.—The Secretary of War authorizes the following announcement: Mr. Edward J. Stettinius of New York has been appointed surveyor general of all Army purchases. He will be in charge of the procurement and production of all supplies by the five Army bureaus, viz.: Ordnance, quartermaster, signal, engineer, and medical. It will be his duty to coordinate such purchases and properly relate the same to industry to the end that the Army program be developed under a comprehensive plan which will best utilize the resources of the country. From the outbreak of the war Mr. Stettinius has been in sole charge of the allied purchases in this country, and had been responsible for the development of the production of war material. His intimate knowledge of war conditions in Europe and in the United States as related to industry and the practical means he has used to accomplish his plans preeminently qualify him for his position. Mr. Stettinius will assume his new duties at once and establish his office in Washington.

Insurance for Every Fighter.—The Treasury Department is making every effort to have every member of America's fighting forces take advantage of the Government-insurance plan, which Secretary McAdoo asserts to be "the most just and humane provision ever made by any nation for its soldiers and sailors." The purpose is rapidly being achieved, the insurance having passed the third billion mark in the total of policies written, and there are many military units in which every member has taken insurance. The automatic insurance provided by the law is only partial and limited protection, payable only to wife, child, or widowed mother and ceases after February 12, 1918. It is important, therefore, not only to the soldiers and sailors of the country but to their families and dependents, that before that date they avail themselves of the full Government protection, which can go as high as $10,000 and is payable to a wife, husband, child, grandchild, parent, brother, or sister. The law also provides for the reeducation and rehabilitation of the totally disabled and monthly compensation to those disabled.

Beware of Swindlers.—No doubt you may have seen the several notices, under "General News," in *The Journal of the A. M. A.* in several recent issues, entitled "Once More a Warning." These refer to swindlers operating in different sections of the country, various letters having been received from victims in Ohio, Colorado and other widely separated states. Now comes a letter from the well-known publishing house of W. B. Saunders Company of Philadelphia, saying a man under the name of E. T. Rogers, claiming to represent the University Progressive Club of Cincinnati, for medical and other journals, has been victimizing physicians in Illinois; and the same subscription swindler, or another under the name of Robert Wayne, has been relieving physicians of their well earned cash in the region of Gary, Ind. It is believed there is concerted action, perhaps by an organized band, being taken at this time of the year, to victimize physicians on so-called "subscription" schemes. Every physician should decline to pay any money by check, or otherwise, to subscription agents not personally known to him, or for whom other physicians cannot vouch. Many of these so-called agents operate under the guise of students "working their way through college."

New Charter Provisions.—January 1, a new charter went into effect in Cincinnati which places all of the medical, scientific and nursing work in the new City Hospital under the direction of the University of Cincinnati. The charter provides that the medical director of each department shall be the professor in the corresponding department of the medical college, and that the board constituted of these directors shall nominate to the board, through the president, all members of the staff of the hospital, including the superintendent, who shall be the general executive and business manager of the hospital. This superintendent will select all of the other employees under the rules of the civil service commission of the city. The charter thus removes the hospital entirely from the sphere of politics, places all the medical, scientific and nursing work under the direction of the medical college, and secures all of the facilities of the hospital for the purposes of education and research. This gives Cincinnati a complete medical teaching and research plant, costing over $5,000,000. The medical college is a regular department of the university, and all of its expenses are paid by it. The city will continue to pay the general operating expenses of the hospital, such as the heating and lighting, food, engineers, janitors, etc., while the university will pay all the expense of the medical, surgical, scientific and nursing service. The total expenses to the city of operating the combined medical college and hospital plant will be, not including income on endowments, approximately $700,000 a year.

BULLETIN EXCERPTS

WEEKLY BULLETIN, ALLEGHENY

Waste Is Criminal

"To waste now is nothing short of criminal."—Secretary of the Treasury McAdoo.

The duty of the American people to economize in consumption of food and all other materials as well as save money, cannot be too often or too strongly urged on them. The duty is so imperative, its observance so vital to our country's success, that it should be kept constantly before them. The proposition is plain and understandable. We have lessened the productive powers of the country by taking 2,000,000 men away from the productive forces of the country; instead of producers of one kind or another the soldiers are consumers of the products of our farms, factories and mines, and when the munitions they expend and will expend against the enemy is considered they are tremendous consumers of the manufactured products of the country. A tremendous amount of the manufacturing energy of the country has been withdrawn from manufacturing the things we use in peace and put to manufacturing the things we use in war. The total loss to the country of the productive energy of our soldiers and sailors and the diversion of a great portion of the other productive energy of the country to war purposes lessen to a great extent the amount of material and supplies produced by the country. To this condition of lessened production and increased consumption of and by our own men must be added the extraordinary demand made on this country to supply the armies of our allies and to a great extent their population with food and other material. We must meet the condition that confronts us in two ways—by the strictest economy in consumption, for every pound we refrain from using adds a pound to be devoted to the uses of our Army and Navy and the military forces of our allies; and by speeding up our production to the limit. The American people are going to do all that they know to be necessary to win this war—to shorten this war. They have only to realize the imperative duty of economy in saving and they will economize and save.

BULLETIN, BLAIR

Patriotism and the Doctor

The daily press chronicles with garnered sentimentalism the deeds of officers and a few of the common soldiers, but the physician, who has exposed himself to equally grave danger and has made greater sacrifices, has remained almost unmentioned.

The physicians of France have gone down like the ideal heores in the midst of his labors in the ministration of the wounded and dying. The Battle of the Marne gave up more physicians than any battle so far in the great war.

The army surgeon's duty is a strenuous one; it requires intense patriotism to a superlative degree. In war, as in peace, it is "a rendezvous with death," but in war it is death in greater numbers and so needlessly. However, we are certain the present needless slaughter will ultimately benefit mankind, even greater than our most sanguine expectation.

So it may be written in all truth that those of our members who have received commissions to practice their profession in the army, are patriots of the first water, the equal in every respect of every soldier and officer, if not superior. The sacrifices are great, giving up paying practices, the comforts of home and the freedom of unrestricted activities.

Sacrifices are difficult to make, but we are proud of those who will go to minister to those of our boys who are going to give up their lives for the sake of humanity and the integrity of our nation and eliminate the atrocities and inhuman actions of autocracy.

Those of us who by force of circumstances are compelled to remain at home do honor and revere those who are at the front giving all that they have that our nation might live and prosper and uphold the ideals of Christianity.

In becoming a part of the Great National Army these men have severed the mooring that has held them fast to the safeties of society. They were accorded unusual powers and privileges in their daily routine of work as civilian physicians, but on the battle field, in the field and base hospitals, this personal autocracy will cease. There will be an even greater field of duties such as were never dreamed of before—a spirit of service for mankind without thought of compensation or reward. The chief aim uppermost will be to perform the assigned duties in the very best possible manner.

The medical profession has given freely of its members, without compulsion or draft, more than 14,000 men to the present date. It is the one profession that unstintingly supports and does its fullest duties by the nation. Those who have given up their practices and accept commissions will be honestly and ethically taken care of by those who remain at home. All the necessary plans are under way that every practice will be maintained and on their return the doctors will receive their old patients and practice just as they left it.

Those who remain have a grave duty to perform and great responsibility rests upon them. These duties are sacred trusts and must be discharged honorably.

MEDICAL MONTHLY, BUCKS

Be Loyal—Be Obedient

Our country and her allies are at war with the worst combination that can possibly be constructed. They are selfish, heartless, uncharitable, fiendish and devilish, and no act is too diabolical or atrocious for them to commit. Such being the fact it behooves all the citizens of this country, and all the citizens of our allied countries to stand solidly together, for now as never before unity and singleness of purpose, harmony and concord in action are essentials to a successful outcome of the objects for which we strive, and the goal for which the vast armies and resources are freely being given to attain.

Loyalty, my friends, does not find effective results in the waving of flags, the beating of drums and loud protests for patriotism, but it does consist in perfect obedience to orders and suggestions of those whom we have chosen to rule over us; to show a wholeheartedness and desire to comply with the wishes and biddings of our leaders, not to obey and acquiesce in a surly, sullen, snarling and crusty manner, and ever keep in mind that such undesirable acceptance is the kind the German desires us to give to our country, and it is the harvest for which they have sown the seeds of discontent and intrigue. Let us move together as one man; let us be united in purpose, in aim, in object and intent, and never lose sight of the fact that to win from the thoroughly prepared and intrenched foe we must be loyal—we must be obedient in mind and heart.

REPORTER, CHESTER

There is a danger that German brutality may beget a decree of the same quality in her enemies. For instance, we recently heard it seriously proposed by a prominent physician that in order to restock the world with men marriage should be made compulsory and that polygamy should be permitted and encouraged. We gasped and rubbed our eyes to see if he was joking—but he wasn't. Are we to answer German frightfulness by American frightfulness? Are all the Divine and time-tested rules of morality and decency to be abandoned for a supposed expediency? We suppose the world will never be the same again either geographically or spiritually as before the war, but we hope the ten commandments will still be held in some respect, and that the Sermon on the Mount will continue to be regarded by many as the basis of our ethical creed.

During the Christmas holidays we have been favored with visits from several members of the Medical Reserve Corps stationed at the various camps throughout the country. We also had calls from officers of the Engineering Corps of the Army and from men on the battleships now lying at League Island Navy Yard. They all bring us the same reports as to the condition of affairs in the army and navy. Without exception they say that the morale of the men is excellent; that the food and clothing supplied are sufficient, and that the wretched stories as to the prevalence of venereal disease in the camps are false. They tell us that the management of the camps is efficient and that the raw material which now constitutes the National Army is being rapidly trained into an effective fighting force. Judging from the appearance and general bearing of these men army life is a healthy one. It appears to be a sort of regulator as we noticed (without mentioning individual cases) that fat men are made thinner and thin and stoop-shouldered men are made erect and fat.

Most of the medical officers have not as yet had much medical work to do. Their time is chiefly occupied with the administration duties and with "paper work" which, we suppose, is a necessary part of their training. The presence of so many distinguished-looking officers gave this old Quaker town a military air that is quite new and brought to some people the first realization of the fact that the United States is at war. Other conditions contribute to this impression—such as the taking over by the Government of the operation of the railroads, the scarcity of fuel and of certain articles of food, such as sugar, and the increase of work caused by the absence of many of our associates. When the distressing lists of casualties arrive the realities of war will be fully appreciated. The spirit of sacrifice and of economy is beginning to be apparent. The man who does not own a Liberty bond is looked upon with suspicion. The individual who appears in a new suit of clothes is regarded as a "slacker"—he should have worn his old clothes and given the price of a new suit to the Red Cross. Shoes that are half-soled are a badge of honor. We economize in our food. With eggs at seventy-five cents a dozen and bacon at forty-eight cents a pound your good American makes his breakfast on oatmeal. Even harmless social diversions are less popular. The New Year's dance that has been a feature with the elite for many years was graciously thrown open to all of us and the proceeds given to the Red Cross. Thus the democratization of the country proceeds, for patriotism does not know social distinctions, and self-sacrifice is becoming fashionable with all classes.

BULLETIN, CLEARFIELD

It always seems that a good start augers well for any enterprise and this year the county societies more than ever before need the hearty support and cooperation of every member in order to make up for the loss of those noble fellows who have gone to care for the boys who are offering their lives on the altar of Liberty. They shall preserve the dignity of the American profession by their noble acts abroad; let us then preserve the dignity of the profession by our noble acts at home and at the same time let us keep the camp fires burning so that when they return as we pray God they may, they will not find us asleep at the post of duty but in action preserving not only life but also the noble institutions which they have helped to found and have fought to preserve. Let us each resolve to commit ourselves more than ever loyally to the tasks before us this year and let us put our whole energy into the work of our county medical societies doing the bit which may be assigned to us with a vim that is unusual for during this year the unusual is what is expected of us and the county society has as much right to exact the unusual of us as any other organization and it becomes our patriotic duty not to be found wanting in any particular. "Quit ye like men."

BULLETIN, LEHIGH

Reports

Through the medium of *The Bulletin* the members of the society are enabled for the first time to read, study and file the annual reports of the secretary and treasurer. Reports of this kind are records, not statistics, and records form an important basis on which to mark progress. Heretofore the society heard the reports read at the January meeting and they made little or no impression, at least there was but a feeble response to some of the indefensible items. Anyone reading the reports can at once learn of the activity of the society, and it is a simple matter to draw conclusions as to our standing as a component part of medical organization. Are we satisfied with our record for the past year? Even a casual glance will disclose many surprises and on deeper reflection we may discover that personally we are responsible for some of the faults.

This is the time when organizations usually plan for the new year and it is only upon a report of previous performances that planning can be done successfully and intelligently. Let us therefore study our record carefully, note the many improvements that can be made, and then let every individual member resolve to make the year 1918 a better one in every respect. The new officers need the encouragement and support of everyone, for it is not the officers alone who can make a successful society. Again we urge you to study the reports and take the lessons to heart.

WEEKLY ROSTER, PHILADELPHIA

REPORT OF TREASURER

To the Philadelphia County Medical Society:

I hereby submit the following report for the year ending December 31, 1917.

GENERAL FUND

Receipts

To cash balance from last year	$1,623.96
To society income from secretary	9,674.76
To receipts from Weekly Roster	902.25
To interest on securities and deposits of treasurer	69.14
To interest on deposits of secretary	22.90
To return from Med. Soc. State of Penna. for Med. Defense	453.75
	$12,746.76

Disbursements

By hall rent	$ 427.50	
By expenses of branches	147.50	
By expenses secretary's office	315.10	
By expenses treasurer's office	19.45	
By officers' honoraria	900.00	
By expenses board of directors	56.40	
By expenses committee on library	108.65	
By expenses committee on scientific program	114.81	
By expenses committee on increase of membership	72.10	
By expenses committee on archives	25.20	
By expenses committee on public policy and legislation	7.00	
By expenses committee on medical preparedness	186.00	
By expenses Weekly Roster	692.54	
By legal advice	225.75	
By entertainment fund	138.39	
By dues Medical Society State of Pennsylvania	5,032.50	
By bonds secretary and treasurer	15.00	
By auditor's fee	50.00	
By safe deposit box	3.00	
By gifts to Drs. Allyn and Wray	90.00	
By dues Chamber of Commerce	50.00	
By expense committee on medical education	16.50	
By expense committee on public health and preventive medicine	125.00	
By expense patriotic rally meeting	70.54	
By janitor's fee	5.00	
By transfer to medical defense fund	231.75	
By bond purchases	1,995.00	
By accrued interest	1.82	
By return of dues	7.00	11,129.50

Cash balance		$1,617.26
To investment balance last report	000.00	
To French government bond purchased	995.00	
To Liberty Loan bond	1,000.00	
	$1,995.00	
By transfer of securities to permanent fund	$1,995.00	000.00
Total balance general fund		$1,617.26

PERMANENT FUND

Receipts

To cash balance last report	$ 731.83
To interest on deposits and securities	1,031.01
To one-half initiation fees	347.50
To payment account mortgage principal	300.00
	$2,410.34

Disbursements

By bond purchases	$1,495.00		
By accrued interest on same	3.51	$1,498.51	
Cash balance		$911.83	
To investment balance last report	$19,193.75		
To French government bonds	995.00		
To Liberty Loan bond	500.00		
To transfers from general fund	1,995.00		
	$22,683.75		
By payment account mortgage	$ 300.00		
Investment balance	$22,383.75		
Total balance permanent fund			$23,295.58

MEDICAL DEFENSE FUND

Receipts

To cash balance last report		$ 703.19	
To interest on deposits and securities		489.18	
To transfers from general fund		231.75	
		$1,424.12	

Disbursements

By bond purchased		$ 500.00	
Cash balance		$ 924.12	
To investment balance last report	$8,898.75		
To Liberty bond	500.00		
Investment balance		$9,398.75	
Total balance Medical Defense Fund			$10,322.87

BUILDING FUND

To cash last report	$102.74	
To interest on deposits	3.72	
Total balance Building Fund		$ 106.46
Grand total cash and securities		$35,342.17

The permanent fund shows an increase this year of $4,101.83 and the medical defense fund, $720.93. The latter now amounts to more than $10,000 and the annual interest on the investments in this fund (approximately $500) will be sufficient to pay for the ordinary expenses of the medical defense of the society members. The total income of the society from invested funds is now $1,650.00.

Respectfully submitted,

Edward A. Shumway, *Treasurer.*

Attest, Franklin M. Crispin, *Auditor.*

December 31, 1917.

"We are now to take part in a new world, which we are assisting in creating—a world where law is to be supreme, where force shall be only the minister and agent of justice as expressed in law. Those who scoff at law have no conception of democracy, for law is the vital breath of democracy. Those who scoff at courts have no conception of democracy, for the courts are its most essential instruments. Democracy can change the forms of its life, but it cannot dispense with the tribunals which apply its principles. We are now fighting the battle of the law, the battle for the rule of reason against the rule of force."—Ex-Justice Charles S. Hughes.

COMMUNICATION

REPORTING OF ACCIDENTS FROM LOCAL ANESTHETICS

To the Editor:—The Committee on Therapeutic Research of the Council on Pharmacy and Chemistry of the American Medical Association has undertaken a study of the accidents following the clinical use of local anesthetics, especially those following ordinary therapeutic doses. It is hoped that this study may lead to a better understanding of the cause of such accidents, and consequently to methods of avoiding them, or, at least, of treating them successfully when they occur.

It is becoming apparent that several of the local anesthetics, if not all of those in general use, are prone to cause death or symptoms of severe poisoning in a small percentage of those cases in which the dose used has been hitherto considered quite safe.

The infrequent occurrence of these accidents and their production by relatively small doses point to a peculiar hypersensitiveness on the part of those in whom the accidents occur. The data necessary for a study of these accidents are at present wholly insufficient, especially since the symptoms described in most of the cases are quite different from those commonly observed in animals even after the administration of toxic, but not fatal, doses.

Such accidents are seldom reported in detail in the medical literature, partly because physicians and dentists fear that they may be held to blame should they report them, partly, perhaps, because they have failed to appreciate the importance of the matter from the standpoint of the protection of the public.

It is evident that a broader view should prevail, and that physicians should be informed regarding the conditions under which such accidents occur in order that they may be avoided. It is also evident that the best protection against such unjust accusations, and the best means of preventing such accidents consist in the publication of careful detailed records when they have occurred, with the attending circumstances. These should be reported in the medical or dental journals when possible; but when, for any reason, this seems undesirable, a confidential report may be filed with Dr. R. A. Hatcher, 414 East Twenty-Sixth Street, New York City, who has been appointed by the committee to collect this information.

If desired, such reports will be considered strictly confidential so far as the name of the patient and that of the medical attendant are concerned and such information will be used solely as a means of studying the problem of toxicity of this class of agents, unless permission is given to use the name.

All available facts, both public and private, should be included in these reports, but the following data are especially to be desired in those cases in which more detailed reports cannot be made:

The age, sex, and general history of the patient should be given in as great detail as possible. The state of the nervous system appears to be of especial importance. The dosage employed should be stated as accurately as possible; also the concentration of the solution employed, the site of the injection (whether intramuscular, perineural or strictly subcutaneous), and whether applied to the mouth, nose, or other part of the body. The possibility of an injection having been made into a small vein during intramuscular injection or into the gums should be considered. In such cases the action begins almost at once, that is, within a few seconds.

The previous condition of the heart and respiration should be reported if possible; and, of course, the effects of the drug on the heart and respiration, as well as the duration of the symptoms, should be recorded. If antidotes are employed, their nature and dosage should be stated, together with the character and time of appearance of the effects induced by the antidotes. It is important to state whether antidotes were administered orally, or by subcutaneous, intramuscular or intravenous injection, and the concentration in which such antidotes were used.

While such detailed information together with any other available data are desirable, it is not to be understood that the inability to supply such details should prevent the publication of reports of poisoning, however meager the data, so long as accuracy is observed.

The committee urges on all anesthetists, surgeons, physicians and dentists the making of such reports as a public duty; it asks that they read this appeal with especial attention of the character of observations desired.

Torald Sollmann, Chairman,
R. A. Hatcher, Special Referee,

Therapeutic Research Committee of the Council on Pharmacy and Chemistry of the American Medical Association.

BUREAU OF MEDICAL EDUCATION AND LICENSURE

MEMBERS BY APPOINTMENT

John M. Baldy, Pres., 2219 DeLancey St., Philadelphia.
William M. Hillegas, Philadelphia.
Irvin D. Metzger, Pittsburgh.
Calvin L. Johnstonbaugh, Bethlehem.
Adolph Koenig, Pittsburgh.

Members Ex-Officio.

Nathan C. Schaeffer, Sec., Dept. of Pub. Inst., Harrisburg.
Samuel G. Dixon, Harrisburg.

ADMISSION OF VENEREAL DISEASES TO HOSPITALS

Philadelphia, Jan. 19, 1918.

Dr. C. L. Stevens,
Athens, Pa.

Dear Dr. Stevens:—The results obtained in the campaign among the hospitals of Pennsylvania for admission of venereal diseases, the outline of which you published in your January issue, are as follows:

Total number of hospitals communicated with..	186
Total number of hospitals heard from and acquiescing in the request	156
Number of hospitals not heard from	30
Number of hospitals declining to acquiesce	1
Number of hospitals in the state approved for internship communicated with	80

Most of the thirty hospitals not heard from are small institutions of fifty beds or less, located in country towns scattered over the state.

The one hospital declining to acquiesce is Titusville Hospital, Titusville.

It will be seen from these results that Pennsylvania is now in line with the best thought on the subject of control of venereal diseases. The boards of managers of the hospitals of the state have arisen magnificently to the occasion. We would emphasize the responsibility which now rests with the medical profession as a whole in their several communities, especially those attached to the various hospitals as staff members. The Bureau would ask that every medical man sees to it that his hospital organizes and does effective work, both in their out-patient departments and in their house service. The slogan should be to "strike while the iron is hot." At no time and in no state has such an opportunity been given medical men to deal effectively with the venereal menace. Now that the Bureau has secured the acquiescence of the management of the various hospitals, if in any given hospital the matter be incompetently or slovenly administered the blame must rest distinctly with the medical men on the staff and the reproach will be theirs to bear.

At a future reinspection of the various hospitals the administration of this matter will be very carefully studied in each institution and where the service is found to be inefficient, the Bureau does not propose to stand on any ceremony or to spare any medical staff which is found to be derelict in proper organization and administration of this department. Any lack of interest or inefficiency of result will be brought pointedly to the attention of the board of managers of that institution in which it is found to occur, irrespective of what the result may be to the medical men responsible. Medical men are strongly urged to take this matter of organization up in staff meeting and promptly to get into consultation with their board of managers.

Let the medical profession of Pennsylvania now demonstrate to the public their measure of responsibility!

Very truly yours,
J. M. Baldy.

LIST OF QUESTIONS SUBMITTED BY THE BUREAU OF MEDICAL EDUCATION AND LICENSURE AT THE JANUARY, 1918, EXAMINATIONS

MEDICAL AND SURGICAL

PHYSIOLOGY, PATHOLOGY AND BACTERIOLOGY

1. Describe the physiology of the kidney. State the organic changes in each of two forms of nephritis.
2. Name the investigations which would aid in diagnosing suspected tuberculosis. Give the technic by which the bacilli may be identified.
3. What laboratory investigations would be suggested by (a) blood in the urine; (b) convulsions during pregnancy; (c) frequent urination; (d) a lump in the breast; (e) an ulcerated lip?
4. Name the enzymes of the pancreas stating upon what kind of foodstuff each acts.
5. Describe the pathological process from the onset of infection to the stage of ankylosis in tuberculosis of the knee-joint.
6. Describe the pathological condition (a) in neuritis; (b) in otitis media; (c) in plastic iritis; (d) in diphtheria.
7. Give a general outline of two common serological tests, noting especially the principles involved.
8. Give critical directions for collecting the specimens in investigating the following conditions: (a) purulent conjunctivitis; (b) cerebrospinal meningitis; (c) tertiary syphilis; (d) thoracic empyema.

9. What injurious effects may follow an abnormality in the secretions of the thyroid gland?

10. Mention the varieties of immunity and give an example of each.

DIAGNOSIS, SYMPTOMATOLOGY, MEDICAL JURISPRUDENCE AND TOXICOLOGY

1. Describe the symptoms and clinical appearance of chancroid and differentiate it from a true Hunterian chancre.

2. What is acute endocarditis? Give causes and symptoms and state briefly how it differs from malignant (ulcerative) endocarditis.

3. Describe in detail the symptoms of acute appendicitis; name and differentiate three conditions in the female which may be mistaken for it.

4. Describe the symptoms of pleurisy with and without effusion and differentiate it from lobar pneumonia.

5. Describe the symptoms of diabetes mellitus and differentiate it from chronic interstitial nephritis both clinically and chemically.

6. Describe the symptoms of gonorrheal arthritis; name two other conditions with which it may be confused and differentiate them.

7. Describe the symptoms of measles and differentiate its skin lesion from that of syphilis.

8. Contrast the poisonous symptoms of belladonna with those of hyoscyamus, aconite and digitalis.

9. What are the common modes (including trade processes) in which lead poisoning is brought about? Enumerate the toxic symptoms of same.

10. A dead body is found in a remote place: name four possible causes of the death, telling how you would substantiate your opinion in each case before a court of justice.

OBSTETRICS AND GYNECOLOGY—PHYSIOLOGICAL CHEMISTRY

1. Discuss the prenatal care of a pregnant woman.

2. What symptoms and conditions would lead you to apprehend an attack of eclampsia?

3. Discuss the symptoms of the menopause, bringing out the cardinal points.

4. Given a woman in labor who suddenly develops the symptoms of collapse, discuss the possible causes.

5. Discuss the mechanism of normal labor, bringing into contrast the mechanism of two deviations from the normal.

6. Discuss the immediate care of the child at birth.

7. Discuss the significance of abnormal bleeding from the vaginal canal: (a) in the nonpregnant woman, (b) in the pregnant woman.

9. Outline the principles involved in the quantitative examination of stomach contents (gastric juice).

10. (a) How would you calculate the calories of energy (heat value) which would be yielded by a diet containing 100 gm. of protein, 500 gm. of carbohydrate, 50 gm. of fat? (b) How would you determine experimentally the energy value of a substance such, for example, as *bread* or *feces?*

ANATOMY AND SURGERY

1. Given a severe scalp wound, upon what would you base your opinion as to the safety of immediate suturing?

2. Describe the immediate and later treatment of severe injury by freezing of the feet. What blood vessels may be involved in such injury?

3. For what purposes may cystoscopy be employed? Give the technic of cystoscopy of the male urinary bladder.

4. What are the varieties of fracture of the skull? State indications for surgical intervention.

5. Name the varieties, give causes and treatment of fistula in ano.

6. State (a) the possible causes, (b) the symptoms, (c) the treatment of extravasation of urine.

7. State the stages and symptoms of hip-joint disease. Outline a character of treatment that may be appropriate to each stage.

8. If called to give attention to a man having a severe gunshot wound of the leg, state what would be your treatment and arrangements for his transportation. (Assume that all of your available physical equipment was carried in a small hand bag and that the patient had to be transported to a considerable distance.)

9. Enumerate the variety of fractures that may occur about the elbow joint. State what nerves may be injured. Outline the treatment of any one form of fracture about the elbow joint, giving the mechanical reasons for selecting the type of splint indicated.

10. What structures may be injured by a dislocation of the shoulder joint, or by a rough manipulation in its reduction? State the bony landmarks of the shoulder joint.

PRACTICE—MATERIA MEDICA AND THERAPEUTICS—HYGIENE AND PREVENTIVE MEDICINE

1. Outline the general therapeutic effects of (a) antimonii et potassii tartras, (b) ipecacuanha, (c) sodii nitris, (d) acidum tannicum, (e) pilocarpinæ hydrochloridum.

2. What remedies would you employ in the treatment (a) of typhoid fever carriers and (b) of diphtheria carriers? What sanitary and preventive measures would you employ?

3. Describe the general management of a case of sciatica and state the reasons for each drug used.

4. Describe briefly the treatment (a) of tetanus and (b) of infantile paralysis.

5. Name five drugs that may be advantageously administered hypodermatically. Give dose and rationale of administration for each.

6. Outline the medicinal treatment of an acute attack of laryngitis and of a possible subsequent bronchitis.

7. Given a case of chronic auto-intoxication with a functional inadequacy of the skin and kidneys, state what remedies and other measures might be employed and with what object in view.

8. Write three prescriptions, unabbreviated, in the metric system: (a) one, in liquid form, for asthma; (b) one, in pill form, for chronic constipation; and (c) one for local application in eczema of the eyelids.

9. Outline in detail the general management of a case of smallpox.

10. Describe the sanitary, dietetic and medicinal treatment of a case of acute gastro-enteritis in an infant one year of age.

CHIROPODY

ANATOMY AND PHYSIOLOGY

1. Discuss the function of the skin and nails.

2. Discuss the function of the kidneys.

3. Discuss the regulation of body temperature.

4. Discuss assimilation and elimination, citing examples of each.

5. Give a general outline of the nervous system.

6. Discuss the circulation of the blood in the foot.

7. Describe the structure of the arches of the foot.

8. Discuss the development and growth of the skin and the nails.

9. Give a general outline of the nerve supply to the foot.

10. How are joints classified and give an example of each?

PRACTICE, HYGIENE AND PATHOLOGY

1. Describe the production of flat foot and its treatment.

2. Outline the directions you would give a patient in the routine care of his or her feet.

3. Name and describe five conditions of the feet requiring special care.
4. Name three antiseptics, their strength for use, and an example of the conditions in which each might be used in chiropody.
5. Outline your treatment for soft corn.
6. What particular points should be observed in caring for the nails?
7. Describe the formation of a bunion and outline its treatment.
8. Outline your treatment for frosted feet. How would you diagnose such a condition?
9. Explain the process through which paring a corn may be the cause of death.
10. Name five abnormalities which may result from ill-fitting shoes.

DRUGLESS THERAPY

ANATOMY AND PHYSIOLOGY

1. Discuss the vasomotor nervous system and its normal mode of action.
2. Name the functions of the liver.
3. Discuss heat formation and heat regulation in man.
4. Give three functions of the spinal cord.
5. Name the tracts of the cord which carry cutaneous sensations (pain, temperature, tactile discrimination and tactile localization).
6. Give the gross and minute anatomy of the kidney.
7. Name the muscles and ligaments that support the longitudinal arch of the foot.
8. Describe the origin, course and termination of the neurons entering into the formation of the dorsal columns of the spinal cord.
9. Describe the boundaries of the obturator foramen and state the structures transmitted through the obturator canal.
10. Name the muscles which move the eyeball and give their nerve supply.

SYMPTOMATOLOGY—DIAGNOSIS—HYGIENE PRACTICE

1. Give the essential points of difference between malignant and benign tumors.
2. Enumerate the early symptoms of malignancy of the breast and of the uterus. (Late symptoms will not be accepted.)
3. State the significance of (a) blood in the urine, (b) blood in the stools.
4. How and through what mechanism does the manipulation of the skin affect the circulation?
5. Give in detail the physiological effects of heat and cold on the circulation of man.
6. A fracture of the upper dorsal region with pressure on the cord would produce what symptom?
7. Differentiate chronic constipation from bowel obstruction.
8. Differentiate acute rheumatism of the ankle from a sprain.
9. Discuss the diagnostic symptoms of tubercular disease of the hip joint.
10. State the significance of the various bleedings coming through the mouth. Differentiate three varieties.

PATHOLOGY

1. What systematic study of pathology have you made? What laboratory work have you learned to perform?
2. Outline the things sought for in a complete urinalysis.
3. What serious effects may be produced by enlarged tonsils and adenoids?
4. Describe the pathological condition in the lungs when affected by pneumonia in its various stages.
5. Describe the method of repair in a fractured bone.
6. Describe the spinal lesion (a) in infantile paralysis, (b) in locomotor ataxia.
7. What laboratory investigations would you advise (a) in purulent conjunctivitis; (b) in sore throat?
8. What are the lesions of syphilis in each of the three stages?
9. Explain how a diseased condition of each of the following organs may cause shortness of breath: heart, kidneys, pleura, lungs.
10. What is the morbid condition in neuritis; in paralysis; in rickets; in jaundice?

MASSAGE AND ALLIED BRANCHES

ANATOMY AND PHYSIOLOGY

1. Name the muscles which enter into the formation of the tendon Achilles.
2. Trace an afferent impulse from the little finger to the spinal cord.
3. Enumerate in order the parts of the small intestines, and name the portion of the large intestine which connects with the small intestine.
4. Give a general outline of the nervous system.
5. Where and by what is starchy food digested?
6. Name the largest tarsal bone and state which tendon inserts into this bone.
7. Where is bile secreted and what is its office in the digestive tract?
8. By what arteries is the heart muscle supplied with nutritive blood?
9. Define voluntary and involuntary muscle and give an example of each.
10. Name three varieties of joints and give an example of each.

PRACTICE, HYGIENE AND PATHOLOGY

1. What are some of the causes of varicose veins? How would you treat them?
2. How would your treatment vary in nervous excitation from that of nervous depression?
3. Outline your treatment for insomnia?
State some hygienic precautions that are important in your office practice.
5. Outline the early and late treatment of a sprained ankle.
6. Give causes for baldness and outline treatment for the same.
7. In what conditions are hot packs or sitz baths indicated?
8. What treatment would you apply (a) in high blood pressure; (b) in fainting?
9. Under what conditions may abdominal manipulations (a) be helpful; (b) be harmful?
10. What is the effect of massage (a) on the skin; (b) on the muscles?

BOOKS RECEIVED

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

Exercise and Health. By Woods Hutchinson. New York: Outing Publishing Company.

Training and Rewards of the Physician. By Richard Cabot, M.D., Author of "What Men Live By" Philadelphia and London: J. B. Lippincott Company. Price, $1.25 net.

A Treatise on Regional Surgery. By Various Authors. Edited by John Fairbairn Binnie, A.M., C.M., F.A.C.S., Kansas City, Mo. Volume III. With 521 Illustrations. Philadelphia: P. Blakiston's Son and Company. Price, $7.00 net.

Diseases of the Skin, Their Pathology and Treatment. By Milton B. Hartzell, A.M., M.D., LL.D., Professor of Dermatology in the University of Pennsylvania. 51 Colored Plates and 242 Cuts in the text. Philadelphia and London: J. B. Lippincott Company, 1917. Price, $7.00.

Impotence and Sterility with Aberrations of the Sexual Function and Sex-Gland Implantation. By G. Frank Lydston, M.D., D.C.L., formerly Professor of the Surgical Diseases of the Genito-Urinary Organs and Syphilology in the Medical Department of the State University of Illinois; Member of the American Urological Association; Member of the Society of Authors, London, England., etc. Chicago: The Riverton Press.

Diseases of the Heart. A Clinical Treatise for the General Practitioner. By Edward E. Cornwell, Ph.B., M.D., Attending Physician, Williamsburgh and Norwegian Hospitals; Consulting Physician, Bethany Deaconesses Hospital; formerly Professor of Medicine, Brooklyn Postgraduate Medical School; Fellow of the American College of Physicians, the American Congress on Internal Medicine, and the American Medical Association; Member of the American Therapeutic Society, etc. New York: Rebman Company. Price, $1.50 net.

BOOK REVIEW

TEXTBOOK OF OPHTHALMOLOGY. By Hofrat Ernst Fuchs. Authorized translation from twelfth edition by Alexander Duane. Philadelphia: J. B. Lippincott and Company. Price, $7.00.

The works of Professor Fuchs are too widely known and appreciated to need any recommendation. Ranking beyond question as high as any textbook on the eye, this latest edition is up to date with numerous revisions and additions to its predecessors. To know it thoroughly is to know the eye. The text is concise and most interesting, yet not elaborated, and the illustrations are profuse and excellent. It is a book that is most valuable to both the general practitioner and the specialist, and one interested in eye work cannot afford to be without it. N. S. W.

SOCIETIES

COLLEGE OF PHYSICIANS OF PHILADELPHIA

Meeting of January 2, at 8 p. m.

Dr. Thomas R. Neilson in the Chair

Italian Medical Activities in the War. Dr. Victor G. Heiser, Director of the East, International Health Board; Member American Red Cross Commission to Italy: It is generally understood that the Italian Army consists of at least 4,000,000 men and that the number of hospital beds is approximately 1,000,000. Just what it means in two years to expand a country's hospital service to these huge proportions can be better appreciated when it is recalled that in the entire United States, with a population almost three times as great as that of Italy, there are only 300,000 beds. In spite of this vast achievement, the work accomplished by the Italian medical profession since the beginning of the war has attracted to itself but little attention in this country.

While probably none of the Allies fighting in Europe have received less aid other than financial help from outside their own borders, the medical men of Italy almost invariably were loath to speak of their achievements. It was characteristic of the Italian medical service to achieve results and then perhaps talk about them. The equipment for the care of the sick and wounded has been provided almost entirely in Italy. Mobile hospitals of 100-bed capacity, which can be taken down and transferred 75 miles and set up and put in service again within twenty-four hours, are in use; the entire equipment being transported on five camions (motor trucks) and three touring cars. New operations, particularly in dental and lung surgery, new instruments without number, have been developed.

The Italian medical service is presided over by an official who has his office with the Minister for War at Rome. Under the chief medical officer there is stationed with each army a principal medical officer who has almost determining powers in directing the medical work of the army with which he is stationed. The care of the wounded is undertaken jointly by the Italian Red Cross and the Sanitare Militare, or Army Medical Service, medical aid being rendered through the following seven classes of agencies: (1) The Posti Medicazione. These are the most advanced dressing stations for emergency service, and are located usually in dugouts in trenches very close to the front. (2) The Sezione Sanita. These are located one or two kilometers behind the front, are dispensaries and more fully equipped than the preceding. (3) Ambulancia di Montagna are located from two to five kilometers behind the front; the most advanced point reached by the Italian Red Cross. (4) The Stazione di Sanita are somewhat larger and better equipped than the Ambulancia di Montagna. (5) The Ospedale di Campo, or field hospitals, are at accessible points somewhat farther back; of 500-bed capacity and are used also as distributing centers where cases are classified and sent to various special hospitals. (6) Ospedale di Tappa are base hospitals several hundred kilometers behind the lines with a bed capacity of from 20,000 to 40,000. (7) Ospedale di Reservo are institutions throughout the cities of Italy which have been made available for soldiers.

For each army there are a number of large quarantine stations provided with steam disinfecting apparatus or sulphur-dioxid chambers. Every patient before admission to the general hospitals, and all prisoners, are passed through stations of this kind. Hospitals afforded by the Italian Red Cross consist largely of tourist hotels, schools and other buildings adapted to the purpose; those provided by the medical service consist of existing army hospitals, military buildings, or entirely new structures. The latter are usually one-story pavilions about 14 feet high, 18 feet wide, of any desired length, constructed of angle iron placed on 6-foot centers, with the intervening space filled in with hollow tile resembling that used in fireproof construction in this country. The roofs are also of tile. They are cheaper than tentage, are cool in summer and can be kept warm in winter. The decreased use of cavalry has made available large numbers of cavalry barracks. In one of these at Udine a single ward has 300 beds. Hospitals are being located increasingly nearer the front and in most unusual places. Thirty or 40 feet under ground and directly under a point where a battle was raging it was a novel experience to see the hospital routine in good operating rooms and wards supplied with artificial ventilation and modern hospital equipment. On the other extreme, at an elevation of 6,000 feet in the Dolomites we came on a hospital of 30-bed capacity hewn out of the side of a cliff. The two sides and back wall were of stone, and the mountain range at this point was so narrow that through a hole bored in the back wall of the hospital it was possible to look into the Austrian trenches on the other side of the mountain. After receiving emergency treatment patients were sent to the rail head on the marvelous teleferica, which often go from mountain-top to mountain-top over chasms thousands of feet deep.

Specialization has been carried to a high degree; at Udine we saw 1,500 fracture cases in a single hospital; at other hospitals we saw only gunshot wounds of the chest. Professor Morelli has invented an improved aspirator for draining fluid from the chest. Pressure within and without the lungs can be accurately read on a gauge and through the development of special technic, which among other things permits the lungs to remain collapsed during definite periods, he has been able to produce some startling results in lung surgery. In 100 recently completed cases there had been no mortality and Professor Morelli believes it entirely feasible to keep the mortality well under 5 per cent. in all gunshot wounds of the chest.

Practically every hospital throughout Italy has one of more roentgen-ray machines, all manufactured in their own country. The smooth organization of the hospital train service was one of the most striking features which we saw in Italy. Often we saw a train back into a side track next to a hospital, take on board fully 350 wounded, and in less than thirty minutes proceed on its way. Everything worked with clock-like precision. One is particularly impressed by the amount of new apparatus invented to meet the needs of war cripples and almost unbelievable progress has been made in appliances and methods for the reeducation of lost functions. Great stress is laid on specialized forms of physical drill for rehabilitating nerve function and remarkable results were shown us. Dr. Guali at the Villa Fiore has devised excellent improvements in artificial limbs, also a clever apparatus for registering the pressure of the artificial foot. At other institutions a trade suitable to the individual patient is taught. Italy has established huge stations for the return of her soldiers from Saloniki and Albania. In view of 100,000 cases of malaria invalided back, the importance of such quarantine stations is manifest. A comparatively small amount of tuberculosis has been encountered in the Italian army, but it is said that 30,000 tubercular Italian prisoners had been returned from Austria. The roentgen-ray diagnosis is a routine procedure in this disease.

Among other activities with which the medical service is associated is an active reclamation department which provides for the collection and repair of articles left on the battle field. The very general employment of huge fireless cookers assures to the soldier absolutely hot meals in whatever position he is. Huge shops for repairing these cookers form part of the system. The prison camps at the front consist of barbed wire enclosures with good tents and excellent cooking arrangements. They are divided into three sections; the first being that in which the prisoners are bathed, their clothing disinfected; in the second, stool specimens are taken for cholera, dysentery and typhoid. After three days those whose stools are negative are sent into the third section where they stay until sent to the interior. For the officers, houses of a semi-permanent character are provided. One is greatly impressed by the kindliness and consideration shown prisoners of all classes. The food is the same as that given to the Italian officer or soldier of corresponding grade. No work is required of officers. No actual official records of venereal disease were available. The disease is stated to have been reduced to almost negligible proportions. A complete medical school has been established near the front line trenches. During the months when the army was comparatively inactive, all medical students in the service were ordered to San Giorgio di Nogaro, at which point professors from various medical schools who are in the army also assembled, being assigned to look after the sick in the vicinity. This enabled them to use the clinical material for the benefit of the students. Finally it may be stated that we were much impressed by the excellent care given the wounded and the spirit of service manifested by the medical officers. They were on duty early and late and a wonderful fellowship and mutual helpfulness prevailed.

PHILADELPHIA LARYNGOLOGICAL SOCIETY

Stated meeting Dec. 4, 1917, at Cadwalader Hall, College of Physicians, Philadelphia.

Dr. George C. Stout, by invitation, reported a case of sarcoma of the velum palati, improved by the roentgen rays. Also a case of bleeding from the respiratory tract, below the epiglottis, apparently nontubercular. He obtained decided improvement with the application of zinc sulphate.

Defective Speech and Some of Its Phases. Dr. Matthew S. Ersner emphasized the lack of attention given to defective speech, quoting several cases where parental and medical neglect have made children miserable and backward. In discussing the forms or types of defective speech, stammering was mentioned as the most important. With proper environment and avoidance of irritation of all forms, a good deal is accomplished toward its correction. It being an acquired faulty faculty, treatment instituted early will undo all the faults and bring about proper speech. Dr. Ersner then described the essential basic principles of speech, namely: breath, voice, articulation and mentality. Other phases of defective speech were mentioned, such as husky voice, whispered voice, falsetto voice, muffled voice and nasal voice. In summarizing, Dr. Ersner called attention to the innumerable stammerers in the European armies now and thousands who are becoming deaf. As otologists and laryngologists, we will be confronted with the momentous problem and therefore must be prepared to teach those unfortunately deaf and the stammerers who will return from the battlefields.

Mrs. Mary Somers Steel, by invitation, spoke to the members of the society urging them and medical men in general, to give their support and attention to the correction of defective speech. Several cases were presented.

Dr. Harry S. Wieder presented a case of unilateral paralysis with edema in a girl with marked pulmonary tuberculosis.

Herman B. Cohen, Reporter.

PITTSBURGH ACADEMY OF MEDICINE

Scientific Meeting, December 11

The Exclusive Use of Iced Normal Salt Solution in Gonorrheal Conjunctivitis. This was demonstrated and cases presented by Dr. Edward B. Heckel. Two years ago a paper was presented by the author before the Medical Society of the State of Pennsylvania on the same subject. Treatment is based on the life history of the gonococcus which lives for only a short time in a room temperature and meets with instant death at 32 F., so the treatment is logical.

Case 1.—A few years ago an adult negro presented himself for treatment. A pure growth of gonococcus was obtained from the secretion from his eyes. In this case the iced normal salt solution was applied every six hours, using two pints at each time. The swelling subsided rapidly and the conjunctivae rolled out, affording the opportunity to apply the treatment direct. During the intervals iced pads were kept over eyes. Pain subsided promptly on the third day, cultures from eyes were negative, and there was no return of symptoms. The patient was well in three days. Cornea was clear throughout.

Case 2.—On Aug. 4, 1917, a young man applied for treatment with gonococcus conjunctivitis. Lids were swollen and edematous, and pus was rolling out. The source of infection was not determined as the patient had no other evidence of any other gonococcus infection elsewhere. Iced normal salt solution was applied and in three days the cultures were negative for gonococcus. In this case a corneal ulcer appeared ten days after the onset on the right of the iris of the right eye, at which time the secretions were negative for the gonococcus. The ulcer cleared up but the area never filled in.

In discussion Dr. Thomas G. Simonton asked if the same results could be obtained with cold without irrigation. Dr. W. H. Kirk said that he has used ice for ten years but never used salt. He asked if any other medication was used. Dr. H. A. Miller reported that he has tried it in a number of newly born infants with good results for prophylactic measures. Its advantage is that there is never any reaction from it, such as there is frequently from silver nitrate.

Dr. Heckel's reply to Dr. Simonton was that the same results could be obtained but that cold is best applied by a solution as a vehicle and the best solution is normal salt. This can be maintained at 35 to 45 F. In reply to Dr. Kirk he said no other medication was used.

Pyloric Stenosis. Dr. J. K. Everhart: While cases of this condition were observed many years ago, Hirschsprung, a Danish pediatrist, was the first to call definite attention to it in 1887. However, most of our knowledge of congenital pyloric stenosis dates from the year 1898. Doubtless the symptoms accompanying this condition have many times been attributed to other causes and thus its true nature has been overlooked and many lives lost which might have been saved.

Much controversy has been aroused by a dual classification, hypertrophic pyloric stenosis and pylorospasm. Many careful observers, after a study of a large number of cases, have become convinced that "a division of pyloric stenosis of infants into spasmodic and hypertrophic types is not admissible" (Holt). All cases of hypertrophic stenosis have one element in common, namely hypertrophy of the pylorus. Spasm may be superadded, but hypertrophy precedes, not follows it. Because of the hypertrophy, the pyloric opening sometimes is so small as to admit only a small probe or occasionally is water tight. Not only is the pyloric sphincter involved, but the entire pyloric antrum is several times its usual thickness. It is believed that only when spasm plus hypertrophy is produced, do symptoms arise. Only in a very small percentage of cases do symptoms appear before the first week (4 per cent. in Holt's series), and it seems that only when spasm is added do symptoms begin. Just what excites the spasm, which seems to mark the beginning of symptoms, is not yet understood.

Clinically the picture of pyloric stenosis is usually a striking one, and in most cases the symptoms are very uniform. Infants in whom this condition occurs are usually males, mostly breast-fed, as a rule nurse well, gain in weight and seem quite normal for several weeks following birth. Sometimes gradually, sometimes suddenly, vomiting begins. As a rule it is abrupt, persistent and forcible. From this symptom alone it is often possible to make a diagnosis when one considers "the time of its occurrence, the manner in which it takes place and the material vomited." The amount is large and it is projected forcibly as a rule, and when the vomiting is not frequent, one often sees an amount much larger than that taken at the last feeding. The appetite is normal and the child usually cries from hunger following an attack of vomiting. If fed again at once, vomiting again occurs, and after a time vomiting is persistent. Strangely enough, changes in feeding seem to exert a beneficial influence for a short time, but the improvement lasts only a day or so, when vomiting returns as before.

Gastric peristalsis from left to right may usually be observed in these cases, and must not be mistaken for intestinal peristalsis. It is seen most frequently and most easily immediately after feeding.

Tumor may be palpated in about 75 per cent. of these cases. It is usually felt at a point about one inch to the right of and a little above the navel, and consists of a movable mass "about 2 cm. in diameter and about 3 cm. long." With bimanual palpation it usually may be made out. Its presence is not essential to a diagnosis, nor does its absence exclude it.

Holt describes a method for estimating gastric retention. A test meal is given and two, three or four hours later is withdrawn "by means of a simple suction apparatus composed of a rubber catheter, a small laboratory wash bottle and a suction tube. The meal may be preferably two or three ounces of breast milk, or diluted condensed milk. Dilutions of unboiled cow's milk should not be used, as the curds may block up the tube." He believes this method gives evidence "quite as reliable as the roentgen ray after bismuth."

Emaciation, constipation and scanty urine are secondary symptoms caused by insufficient food. Loss of weight is an invariable symptom, and may be accepted as a guide as to the severity of the condition, and when the loss reaches two ounces or more a day, it must be regarded as serious. In the worst cases the course is a rapidly progressive one. Vomiting occurs after every feeding, the loss of weight may reach a pound a week, constipation becomes decided, and unless relieved by surgical measures, death from exhaustion occurs, several weeks after the first appearance of symptoms.

The treatment of this condition is both medical and surgical. The former may be summed up in two procedures; namely, careful feeding and gastric lavage. A remarkable and so far an inexplainable thing is that often with almost any change in diet, so long as it remains suitable for the infant, improvement follows. As a rule, however, it lasts but a few days, when all the symptoms return as before. Breast milk should be given when obtainable, in one to three ounce feedings, every four hours. When this food is not to be had, a dilution of one-third whole milk should be employed. These children bear fats badly. Carbohydrate, either as lactose or as dextrimaltose, should be added in suitable amount, and in some instances large amounts of sugar are well tolerated. To supply much needed liquid to children whose bodies are depleted of water, 100 to 200 c.c. of a 4 per cent. dextrose solution in normal salt may be administered subcutaneously. The administration of food per rectum is valueless, as is also the administration of drugs by mouth for the purpose of relieving spasm. Lavage should at first be done twice daily, then once daily and, when improvement follows, at longer intervals. This simply serves the purpose of ridding the stomach of retained food and mucus. Improvement is indicated by a lessening of vomiting and by an arrest in the loss of or a slight gain in weight. Even when satisfactory progress is made, a period of six to eight weeks, or longer, is required to effect a cure.

Surgical measures were first resorted to in 1893 when a jejunostomy was done on a child who died. Gastro-enterostomy was first done in 1898 by Meyer of New York, and since that time divulsion, pyloroplasty and several other procedures have been resorted to, all with a high rate of mortality.

Rammstedt, in 1913, reported a successful operation in which he divided the pylorus by an external incision. This operation, according to the description of Downes who has used it on a large number of patients, consists "in making a longitudinal incision of from 2 to 3 cm. through the serosa and the hypertrophied circular muscle fibers of the pylorus to the thickened mucosa." The duration of the operation is from ten to twenty minutes. In performing this operation the pyloric tumor should be held firmly between the thumb and index finger and as the incision is deepened the edges of the wound are gently forced apart, and a small pair of blunt-pointed curved scissors may be used to spread the incision. When the muscle is sufficiently divided the liberated mucous membrane protrudes freely into the wound.

From a theoretical point of view, the Rammstedt operation is obviously superior to other methods. The time required is much less than by any other method, the stomach is not opened, feeding can be resumed almost immediately, and shock is considerably lessened. Fortunately, these advantages are borne out by practical experience.

Of almost equal importance with skilled surgical attention is the after-care of these patients. In no small measure is the success of operation dependent on the subsequent treatment. These patients are all so young and frequently of such lowered vitality that attention should be given to the smallest details. The infant must be kept warm by wrapping in warm blankets and these surrounded by hot water bottles. Stimulation when called for may be given by injecting small doses of adrenalin.

From 100 to 200 c.c. of normal salt solution subcutaneously are advisable in those instances in which all liquids have been rejected for some days and when the loss in weight has been extreme. As soon as all effects of the anesthetic have disappeared, liquids may be given by mouth. At first small amounts of warm water are given at frequent intervals and if well borne, one quarter to half an ounce of breast milk, diluted with an equal quantity of warm water, is given with a medicine dropper every three hours. Within twelve to twenty-four hours, undiluted breast milk may be given in gradually increasing amounts.

After carefully summing up the pros and cons of the various treatments already tried, Holt says that "the immediate performance of the Rammstedt operation offers a better chance of life than any other method of treatment yet proposed."

Report of case seen in September, 1917. Infant 4 weeks old; weight at birth 7 pounds 14 ounces, weight at end of three weeks 8 pounds 1 ounce. Patient regurgitating and vomiting for one week with loss of all food and loss of one pound in one week. Roentgenogram taken by Dr. Boggs showed practically all of the food still present in the stomach at the close of two and one-half hours after eating. Patient was operated on the next day by Dr. Acheson Stewart at the West Penn Hospital, who performed a Rammstedt operation. Four hours later patient was put on breast milk. With occasional regurgitation child made uneventful recovery. At the present time, or three months following operation, patient weighs 11 pounds, a gain of 4 pounds.

In discussion, Dr. F. T. Billings said that the cases of pyloric stenosis are classed in four separate groups: (1) Hypertrophy which precedes spasm; (2) spasm which precedes hypertrophy; (3) hypertrophy alone, and (4) spasm alone. Dennet has found hypertrophy in a seven-month fetus. Dr. Holt's opinion is that hypertrophy is congenital and precedes spasm.

Dr. C. S. Foster asked the question, "Are the stomachs enlarged?" He has operated on three cases in which the stomachs were enlarged and tumor of hypertrophy was as large as a knuckle.

Dr. Thomas G. Simonton emphasized the point that often sufficient attention is not paid to the character of vomiting, which is always projectile in type.

Dr. J. K. Everhart, in closing, said that while it was interesting to know which was first, hypertrophy or spasm, that it was immaterial. The condition exists and needs relief. He made a plea for its early recognition and early surgical treatment. In the case he reports the stomach was not enlarged.

The Estimation of Cardiac Strength and the Importance of Conserving Energy During Operations. Dr. R. R. Huggins: A correct estimate of the reserve strength of a patient must be made before the surgeon can give a reasonable assurance of the safety of the procedure. Vital resistance must remain a complex subject, and one's conclusions can only come with the final analysis after a most careful study of the various important organs of the body. Not the least important of these is a measurement of the cardiac strength. New instruments of precision are being devised and it is not unlikely that soon there will be disclosed a method for measuring accurately the strength of a given heart together with the whole muscular envelope of the circulatory system.

Where there is any doubt about the resistance, it is not sufficient for the patient to have been passed on by the internist as a good risk in every instance because it is impossible for him to know and calculate how much extra work the heart may be called on to do, and too seldom do medical men have the time and opportunity to closely observe postoperative conditions. It, therefore, becomes necessary for the surgeon to have a keen appreciation of the subject of vital resistance, muscular tone, and strength of the heart muscle, because he alone knows to what extent he expects to drive a given heart. The dangers in the heart muscle causing weakness and to which we refer has been commonly referred to as myocarditis and the same condition which finally produces serious danger or death as acute dilatation. The causes of myocarditis may be many, but it is probably true that the majority of such cases with which the surgeon has to do comes from infection or chronic toxemia. This is true particularly in chronic infection of the gallbladder, the pelvic organs in women, and not infrequently from the toxemia incident to fibroids of the uterus or pregnancy. It is very interesting to note that there is a striking relationship between the general muscular tone of an individual and that of the cardiac vascular system.

So far as the study of the heart is concerned, it is important that we keep in mind that it is composed of the same structures as the blood vessels, and that it is but a differentiation of the muscular envelope, every part of which is capable of maintaining a certain pressure. The maintenance of the circulation is not carried out by the heart alone. The blood vessels constitute an integral functionating factor. It is difficult to determine how much weakening of either factor may lead to dilatation, but it is important that the intimate relationship be kept in mind. The variations which may occur are so complex that we should be able to make accurate measurements on the envelope as a whole if we are to be certain of its efficiency. It is important that an accurate estimate of the tissue strength in general be made, for in our judgment much depends on a keen appreciation of the amount held in reserve in every patient.

In this connection, it is interesting to refer to the observations made by Sir James McKenzie and Dr. Wilson in a study of 400 soldiers of the present war who had been certified and treated as having heart affections. In their opinion in at least 90 per cent. of them the heart is not primarily at fault. They considered the condition as one of general exhaustion and the circulatory symptoms but evidences of a general state. In the majority of the cases, the onset of this exhaustion was found to be connected with an infection.

The problem then is how can the cardiac strength be determined, and in the presence of weakness how can we manage the course of the operative procedure in order to avoid a serious result? It so often happens that after years of stress due to some definite pathological condition the patient is presented to the surgeon as the court of last resort. It is unfortunate that the proper estimate of strength under these conditions must still remain one of personal equation, and that no instrument of precision has as yet been devised whereby the real horse power of the circulatory system may be revealed.

Inquiry should always be made for the presence of shortness of breath on exertion, and in doubtful risks the effect of exercise should be noted. Much may be learned by careful examination of the resistance and the consistency of the muscles at rest and in action. A history of any disturbed condition in the function of the thyroid gland always suggests the probability of friable muscular tissue lacking both tone and strength. The same is true in the presence of fibroid tumors of the uterus. Every case of chronic infection of the gallbladder is below par in this respect and the high mortality following operations on this organ is largely due to weakness not only to the heart itself, but of the entire muscular system.

If the histories of these patients are gone into carefully, we find that they tire easily, suffer from dizziness, dyspnea on exertion, weak spells or slight swelling of the feet or ankles, although the heart appears normal by the ordinary methods of examination. It is surprising how frequently this condition is found in stout women of middle age, the type that are afflicted with gallbladder disease, prolapse of the uterus and fibroids, and we are convinced that many of the deaths that occur one, two or three weeks after operation in this type of patient are attributed to embolism or various causes which are in reality due to circulatory complications, many of which could be avoided by more careful preoperative study.

Perhaps one of the best methods for measuring the functional capacity of the heart, is that described by Graupner and partly confirmed by the interesting work of Barringer (*Archives of Internal Medicine*, November, 1915, XVI, No. 5, and March, 1916, XVII, No. 3). The essential features of this test are the deductions made from the form of the curve of the systolic blood pressure after measured amounts of work. These experiments are carried out by the bicycle ergometer and with dumb bells. He concludes that in the pulse rate and blood pressure reactions to graduated work we possess a valid test of the heart's functional capacity. If the systolic blood pressure reaches its greatest height not immediately after work, but from 30 to 130 seconds later or if the pressure immediately after work is lower than the original level, that work, whatever its amount, has overtaxed the heart's functional capacity and may be taken as an accurate measure of its efficiency.

For several years we have made a careful study of the blood pressure before and during operation. We are impressed with the importance of the pulse pressure both as an index to strength previous to and as a danger signal during operation. Our method is to take the pulse pressure with the patient at rest. If, after exercise, there is a pronounced fall in the pulse pressure it is taken as an indication of cardiac weakness and a most careful study is made of the history and general condition of the patient. There is no doubt that one of the most important danger signals that we possess in the anticipation of shock and the cardiac failure accompanying it during ether anesthesia is shown in a fall of the pulse pressure. It is also of equal importance in the prognosis of very sick patients after operation. Constant fall in the pulse pressure indicates serious danger.

With this problem in mind, and having a patient where operation is elective and where there is no hurry about immediate performance, how shall we proceed in order to make the operative excursion safe and to restore this patient to health with the least expenditure of energy?

Many of them need prolonged rest and careful nourishment in order to stand the strain of a difficult operation. Our experience leads to the belief that rest in bed for a sufficient period of time is of great value to the class of patients under discussion. If we are to improve our results it is necessary to insist on this preliminary rest together with all other measures necessary to bring about an increase in strength.

The administration of sedatives is of great assistance in maintaining a quiet disposition. Good sleep for a few nights is a wonderful help, and it is gratifying to note the rapid change which usually occurs. Large doses of bromids together with a good hypnotic at bedtime should be given for forty-eight hours. Before going to the operating room morphin should be given sufficient to make the patient almost asleep. All this quiets the heart's action and the nervous system as well.

We now come to the selection of the anesthetic which is one of the most important elements that enter into any surgical procedure where weakness of the cardiac muscle is concerned. Sufficient experience has been gained to enable us to formulate some conclusions as to the merits and dangers of the various methods of anesthesia. It must be admitted that there is no anesthetic at present which does not have certain dangers immediate or remote. Because a patient does not meet with sudden death as a direct result of the anesthetic by no means alters the fact that not infrequently patients die several days following the operation, from weakness and cardiac failure due largely to the effect of some form of inhalation anesthesia. This is true of both nitrous oxid and ether. If one carefully observe the effect of ether or nitrous oxid during the first thirty minutes of administration he is impressed with the effect on the cardiac vascular system in many instances. The increased pulse rate, rapid respiration, engorged veins, contracted muscles all indicate severe strain and great expenditure of energy. This is soon followed by the exhaustion which is certain to follow long continued activity, the degree of which depends entirely on the length of time and the severity of the procedure. It is true that these anesthetics must still remain the safest and best for routine work, but I think it is well for us to appreciate their effect as applied to this particular subject and at least use them with the full knowledge of what may be the result. In our own work most of which is done in the lower abdomen, spinal anesthesia is used very often in order to avoid the above-described effects. In spinal anesthesia, the blood pressure falls, the respirations are slow and shallow, the pulse rate is reduced and the heart is working more slowly and against less peripheral resistance. The skin is pale and there is less than the normal loss of fluid. The muscles are completely relaxed and the patient presents the appearance of subactivation. So that after an operation of one and a half hours length, with all bodily activities subnormal and all traumatic impulses blocked, the patient has expended much less energy than under normal conditions.

There is a corresponding fall in both systolic and diastolic pressure and if one desired to secure a perfect rest for the heart muscle no better way could be derived than to administer spinal anesthesia. Consequently, instead of driving a tired organ to death as sometimes happens with ether, it is given a period of perfect relaxation and rest. A lowered mortality in certain cases where this is an important factor is alone a sufficient excuse for its use.

The third phase or postoperative treatment is of great importance. Much of the expenditure of energy following operation is due to the patient's discomfort, distention, etc. Formerly the profession was opposed to opiates so that the patients spent restless nights with loss of much energy. Recently and especially since the author's own operation, he does not believe that the toxic effect of opiates is as great as the toxic effect of restlessness. There is not as much discomfort or nausea with opiates as without.

In discussion, Dr. S. A. Chalfant said he believes that those patients suffering from the influence of infections on the heart, especially infections from the pelvis, need long continued rest before operation. He believes that fear before operation is a great factor, and that a rapid pulse is usual in these cases after operation. He has had no experience with spinal anesthesia, having been prejudiced at first when it was not well administered and the cases were not well chosen. He is in accord with Dr. Huggins in the use of morphin after operation. He gives morphin, gr. $\frac{1}{16}$, Q. 3 H. hypodermically after operation, which gives the patient four to six hours sleep after operation.

Dr. Thomas G. Simonton said he agrees with Dr. Huggins in the important measure of testing as accurately as possible the cardiac strength. In his recent work in one of the southern camps the test for the cardiac strength was to ask the soldier to hop on one foot 100 steps, at which time the pulse might be 90. If, when lying down for a time, the pulse dropped to 40, it was an indication of a damaged myocardium.

Dr. J. I. Johnston emphasized the point that it is the disturbance of relation of the systolic blood pressure to the diastolic blood pressure which is important. Whether the difference between the two be greater or less than 50, which is usually taken as a normal difference, it is of equal significance. In pneumonia the profession has been slow to use morphin. Outside of Group 1, rest in the open air is the important treatment which is to be procured, with the assistance of morphin if necessary. He overcomes the intestinal stasis by use of castor oil every one or two days.

Dr. F. L. Todd said he approves of all that has been brought up by the paper and discussion. He feels that the dread of operation exerts a tremendous effect on the heart muscle and other muscular structures, which handicap the patient tremendously.

Dr. C. H. Henninger stated that patients having gone through operation require at least seven hours sleep or they die of exhaustion. He does not hesitate to give opium and he finds that deodorized tincture is best to give.

Dr. R. R. Huggins, in closing, mentioned that the surgeon must assume the responsibility for the patient's cardiac and general strength. Cardiac weakness occurs in many unsuspected cases. He believes that somewhere and somehow the solution of the problem will be found in the blood pressure. All patients do better if given rest. He has never seen any patient with acute illness acquire the morphin habit; it is the chronic cases with recurring attacks in which the patients develop the habit.

Frederick B. Utley, Reporter.

PITTSBURGH OPHTHALMOLOGICAL SOCIETY

Meeting of December 3, at 8. p. m., President Heckel presiding.

Dr. Heckel presented a patient on whom he had performed a plastic operation for enlargement of the right socket by means of a Thiersch graft. A prothesis was worn with excellent effect.

Dr. Markel presented Mrs. E. H., aged 62 years, who first came under observation March 10, 1917. The ophthalmoscopic examination at that time showed the disks irregular and pale with deep glaucomatous cupping; the retinæ especially in the macular regions had a peculiar granular appearance as though covered with minute oil droplets. The fields were very much contracted. With correcting lenses the visual acuity in O.D. and O.S. was 20/40 and 20/20 pt. respectively. Tension in each eye (McLean tonometer) was 33 mm. The patient has been using a solution of eserin salicylate (gr. ⅛—oz. 1) faithfully and an examination on Dec. 1, 1917, showed tension O.D. 30 mm., O.S. 33 mm.; corrected vision O.D. 20/30, O.S. 20/20 pt. The visual fields are considerably improved.

In discussion Dr. Heckel stated that in his opinion the oil-like points on the retinæ were the result of a colloidal degeneration and simply coincidental with the glaucoma simplex.

Dr. Krebs presented a case of myopia in a man of 42 years, in whom there was marked choroidal degeneration in both eyes. O.D. was his better eye until one year ago when he developed retinal metamorphopsia; soon afterward the vision dimmed and has failed progressively until at the present time he can count fingers at one foot (eccentrically), a large central scotoma being present. There are numerous floating vitreous opacities, and in the macular region a large atrophic patch, with several smaller areas of choroiditis peripherally. The left had a corrected vision of 20/30. About two months ago he developed metamorphopsia in this eye also, and fears that it may also become blind. The ophthalmoscopic examination shows some floating vitreous opacities and three atrophic areas in the choroid, up and out from the disk. Several noticeable streaks or reflexes of whitish color pass over the macular region but the macula does not seem to be elevated. Careful physical examinations, including Wassermann and tuberculin tests, as well as radiograms of head and teeth, failed to disclose any cause for the trouble.

Dr. Stieren reported the following interesting case: W. E. G., aged 26, white, U. S. Navy, hospital apprentice, appeared Oct. 18, 1917, with a violet iridocyclitis of the left eye and intense pain which was almost unbearable. Wassermann and gonorrhea tests were negative. Radiogram of teeth negative, but the *right* antrum showed a distinct shadow. The antrum was opened and drained by Dr. A. A. MacLachlan, and salicylates administered internally; atropin, dionin and hot compresses were used locally. A decided improvement was noticed in 24 hours, and the eye was quiet in four days. The patient suffered a relapse 3 weeks afterward, as he had neglected to have the antrum treated after leaving the hospital. An inspection showed an infection to be present again in the antrum and reestablishment of free drainage and cleansing again brought prompt relief of the eye trouble.

Dr. Steim reported a case of a man of 23, in good health, who complained of a pain in the eyeball. He was seen on a Thursday morning and again in the evening when the ball was found proptosed. On Friday evening the temperature was 104 and an incision was made in the upper cul-de-sac without any pus being obtained. On Sunday morning an operation was performed and pus was found under the periosteum of the roof of the orbit and in the ethmoid cells and the frontal sinus. The eye had no light perception. The patient had been in swimming and the infection may have taken place at that time.

Hunter H. Turner, Reporter.

WILLS HOSPITAL OPHTHALMIC SOCIETY

Meeting, December 4, 1917, Dr. P. N. K. Schwenk, chairman.

Disciform Keratitis. Dr. William Zentmayer presented a case. The patient, a carpenter, 51 years of age, stated that several months ago vision of right eye became blurred. Eye had been uncomfortable for some time previous to this visual defect. There is no history of injury. Examination shows slight pericorneal injection. Somewhat eccentrically placed on the cornea, up and out, there is a disk-shaped opacity about 7 mm. in diameter. The rim of the opacity to the width of about 1 mm. is much denser than the remaining part. There is also a slightly deeper spot of infiltration at the exact center. The area between is much less dense. The entire area is made up of fine granular dots. At the upper end of the vertical diameter of the disk the opacity reaches within about 2 mm. of the limbus and, at this point, the infiltrated margin is a little broader than elsewhere, giving a signet-ring appearance. At this point the limbal conjunctival vessels are slightly enlarged. The infiltrated area is anesthetic. Tension is slightly minus.

Dr. Zentmayer was ready to accept the view that this type of keratitis was of neuropathic origin; but he thought the theory of mild infection more in keeping with the clinical features, the course, and the results of experimental research.

Dr. S. D. Risley, discussing Dr. J. Milton Griscom's case of tubercular keratitis, said that in his experience the tubercular deposits in the cornea were suggestive of uveal involvement, since they usually occurred at the angle of the anterior chamber or on the membrane of Descemet, which was embryologically an extension forward of the uvea. He cited as corroborative of this view the case of a man on whom he had performed an iridectomy for an acute onset of increased tension with violent pain. Convalescence was tedious and careful study with oblique light showed a gray deposit in the cornea at the angle of the anterior chamber at the root of the cut iris at one side of the coloboma, which suggested a tubercular nest. A von Pirquet test produced marked local and general reaction with increase of temperature. After subsidence of the general reaction, the eye recovered rapidly under rising doses of old tuberculin. The ophthalmoscope then showed general choroiditis with atrophic or yellowish patches, probably tuberculous in character. The tubercular choroiditis, Dr. Risley thought, was a sufficient explanation for the sudden onset of increased tension of the globe, and for the delayed convalescence after iridectomy, the corneal infection occurring only after the iridectomy had released the tension and made possible the forward flow into the anterior chamber.

Discussing Dr. Radcliffe's case of epithelioma, Dr. Risley congratulated Dr. Radcliffe on the success of his procedure and wished to emphasize, first, the motive and, second, some points in the technic of the Thiersch graft. The motive he thought should be simply to remove the diseased tissues by the simplest possible method, which he had found to be by scraping them away with a small scalpel. With this instrument, as Dr. Radcliffe had quite clearly pointed out, it was possible to differentiate between the hard resisting epitheliomatous and the softer normal tissue. The technic employed in securing the graft was both difficult and important, since only the living epithelium should be secured. For this purpose he had found a very sharp razor, hollow ground on one side, the most convenient and best instrument. The graft should be removed directly from the razor blade to the denuded surface which it was designed to cover.

Dr. W. C. Posey exhibited a case of extensive epithelioma of the orbit. When the case first came under his care a year ago, the growth had invaded the external canthus and had pushed its way around the external wall of the orbit to the temple. He had dissected out the mass as well as he was able and had filled in the gap of denuded tissues by a pedicled flap from the temple. The case then passed from his observation until two weeks ago, when an extensive recurrence of the growth was noted, the first signs of which were said to have appeared about four months after its removal. The cancerous mass now presented a revolting appearance, the entire region represented by the canthus and right temple being a sloughing sore. The tissues of the outer side of the globe seemed involved and the eye appeared doomed. As the patient was blind in the right eye from an overripe cataract, the outlook was bad. Before operating on the cancerous area the cataract was successfully removed from the right eye. Some days later, under ether, the entire area of the cancer was removed with the knife, and the sublying tissues thoroughly treated by electrical desiccation. As is now apparent, the results of this procedure surpass all expectations. The wound left from the operation is granulating and filling in with great rapidity. Notwithstanding the advanced age of the patient, 67 years, and a general vascular sclerosis, the tissues of the eye appear normal and the corrected vision is normal. Dr. Posey spoke in enthusiastic terms of the remarkable results achieved in such cases by desiccation.

Dr. Posey spoke at some length on the various operations devised for the cure of contracted orbit, and referred particularly to the case of a young man whose orbit had been almost entirely obliterated as the result of a lime burn. The lower culdesac, restored by the Maxwell method, was amply deep, but there was some drawing downward of the outer half of the lower lid. Dr. Posey said that he had observed this complication in all of the cases he had operated on by this method, and thought that the author of the operation had directed that an unnecessarily wide area of skin be taken from the skin lying below the lid. Instead of a width of 10 mm., 7 or 8 mm. suffices, and in future he will so modify the incision that the flap is somewhat narrowed at its temporal border. With the assistance and counsel of Dr. Schwenk, he had obtained a sufficiently deep upper culdesac by splitting the external canthus and implanting into the upper part of the socket, previously prepared for its reception by a careful dissection of the remnant of mucous membrane present from the sublying tissues, a long skin flap taken from the lid just below the brow. After the recent method of Schwenk, the outer canthus was repaired at the time of the operation, by the insertion of deep sutures tied over a button. These, however, pulled out in a few days, necessitating the postponement of the repair of the gap left at the outer angle of the socket until later. It is important to carefully stitch the flap to the edges of the denuded area. The repair of outer angle of orbit was done some weeks later by excising a diamond-shaped area of skin from the base of the flap. A Fox conformer was kept constantly in the socket, a point insisted on by Dr. Posey to establish sufficient depth in both culdesacs. After the artificial eye was inserted, the tissues at the outer canthus again began to stretch, requiring a second operation for its repair. Dr. Posey thought the drawing downward of the outer half of the lid, as a sequel of the Maxwell operation, had much to do with the difficulty in the repair of the canthus. The final result was excellent, the patient being able to wear an eye of suitable size.

Harold W. How, Secretary.

COUNTY SOCIETY REPORTS

ELK—JANUARY

The Elk County Society held its annual meeting, January 10, and elected officers for the ensuing year. An amendment to increase the dues from $5 to $10 was lost. On motion it was decided to remit the dues for the "duration of the war" of all members who have or may enter Federal Service. It was decided to meet at Ridgway on the second Thursday of each month instead of meeting at various places.

Dr. Walter C. Shaw read a paper on "Vincent's Angina." He called attention to the fact that the disease is not a rare one and that in some of the more obstinate cases of stomatitis we may be dealing with Vincent's angina. Certain forms of ipecac are practically specific for the form of pyorrhea that is caused by a pure amebic infection, but recent observers have demonstrated that in those cases complicated by the spirilla infection ipecac is not curative. This may, in a way, explain some of the failures in treating with ipecac cases of pyorrhea due not to the entameba but a mixed infection, the diagnosis in which could have been made only with the microscope.

Dr. Shaw gave the four types, bronchial infection, balanitis, bacteriology, etc., as given by Drs. Campbell and Dyas in an article published in *The Journal of the American Medical Association,* June 2, 1917, and then reported the following case:

Mrs. S., Swede, aged 26, is the mother of four children and has had two miscarriages. One year ago she had an abdominal operation, likely a ventrosuspension, and made a good recovery. She has had epilepsy for about two years, the attacks at first resembling petit mal. For the past six months she has had convulsive attacks, sometimes four in a day. There seemed to be a distinct relation between the attacks and the menses. On October 16 she was taken sick, complaining of sore throat, headache, pain in back and limbs. When I saw her in the evening she seemed to be suffering from an acute tonsillitis. The next morning her throat was found to have patches of whitish membrane on both tonsils and the posterior pharyngeal wall. A diagnosis of diphtheria was made and 10,000 units of antitoxin given; in eight hours there seemed to be some improvement of local symptoms. The next day, as there seemed to be no further improvement, 10,000 units were given; improvement seemed to be rapid for three days but as there seemed to be a slight extension on the 21st Dr. Logan administered another 10,000 units. Following this injection there was slight improvement, but there seemed to be an extension of the membrane the next day; the membrane rapidly extended along the alveolar border to the incisor teeth, involving the lips and the under surface of the tongue. The patient complained of great pain in the tongue and the lips; in fact, the pain was so great that food was refused for several days. The tongue had a thick brown coat and the breath was foul. At this time Dr. Hull of the State Health Department was in town, and as I felt I was not dealing with an extension of diphtheria but some form of stomatitis, I invited him to see the case with me. He said it was rather suggestive of Vincent's angina and advised smears to be made. This was done and the diagnosis cleared up.

This disease like all spirilla diseases is best treated with salvarsan, but on account of the difficulty in obtaining it the patient was given two intramuscular injections of sodium cacodylate, 3 grains, on alternate days; she was also given Fowler's solution to the physiologic limit and a mixture of the following: Vinum ipecacuanhae ½ ounce, glycerin 1 dram and Fowler's solution to make 1 ounce; a few drops of this mixture is put on the toothbrush and the teeth brushed two or three times a day. Under this treatment improvement was rapid; in three days the membrane was gone, and in ten days the ulcers were entirely healed.

Silver nitrate, trichloracetic acid, iodin, tincture of ferric chlorid, potassium permanganate have all been used and in mild cases some of them with success. At the Municipal Hospital in Philadelphia, the deep ulcers are cauterized with pure nitric acid and followed with some form of arsenic.

After consideration of the condition we may arrive at the following conclusions: Vincent's angina is not a rare disease. It occurs in epidemics in crowded quarters; frequently follows diphtheria; often complicates pyorrhea alveolaris. The diagnosis is microscopic. Arsenic in some form is the only successful treatment.

S. G. Logan, Reporter.

FRANKLIN—DECEMBER

The meeting of the Society of Franklin County was held December 18, in the Arbitration Room of the courthouse, Chambersburg, Vice President Shull presiding until the arrival of President Asper. Letters from Lieutenants Charles C. Gans, Camp Dix, N. J., and M. W. Stofer, somewhere in France, were read Arrangements were concluded for printing the adopted fee bill of the society. Officers for 1918 were nominated. Dr. Coffman, secretary for the past year, spoke of the statement made in the *Call and Roster* to the effect of his declining further nomination. Since that statement was made circumstances in respect to his occupation have changed, and being urged by the members to continue in the office he announced his willingness to serve the society if desired. On motion of Dr. T. H. Weagley a vote of thanks was extended Dr. Coffman for the reconsideration of his intention to retire from the office of secretary, and for his earnest care and devotion to the work. On motion a bill for $14.44, for Christmas tokens sent the four members now in service, was ordered paid.

Dr. James H. Swan gave a clinical description of a case in his practice. From the way this case was reported to him in his office it appeared to be grip, for which he prescribed. Three days later he was called and found the woman who had been ill for three weeks with the chest full of fluid but no rise in temperature. Severe paroxysms of pain were frequent and required anodyne treatment. Later in consultation it was deemed best not to aspirate, but to wait. Still later elevation of temperature came on and expectoration of heavy sputum supervened. The case progressed slowly to recovery. The case was a peculiar one in its behavior and there was suspicion of probable interference in pregnancy, but it could not be verified.

John J. Coffman, Reporter.

HUNTINGDON—JANUARY

The Huntingdon County Society met in the Huntingdon Club Rooms at 1:30 p. m., January 10, with President Fetterhoof and nine members present.

Dr. C. G. Brumbaugh read a paper on "Specializing in Obstetrics," in which he spoke of the need of midwifery in civilization and reviewed the history of it as a profession, reflecting on the death rates from diseases incident to pregnancy and labor. He said that under present conditions obstetrics calls for emergency, and often major, surgery; it is an irksome part of general practice and the medical schools do not give adequate time to the teaching. Doctors should diagnose position by abdominal palpation and location of fetal heart sounds. They should know the significance of pelvic measurements and judge the amount of cervical dilatation by the height of the contraction ring. Cleanliness and patience are necessary. Unnecessary internal examinations and lacerations by forceps, juxta-position of the quarantine placard and the lying-in bed are deplorable. An extra suit of clothes and a fumigating closet in the home of the general practitioner are conducive of a clear conscience and untroubled slumber. The life of the unborn citizen is an asset of value to the state and should be protected by the state. The prospective mother should be made to certify to her ability to provide practical hospital conditions in her own home or spend her lying-in period in an institution equipped and managed by the state. Let us preach the doctrine of hospitalization for parturients.

In the discussion of this paper was brought out the value of the roentgen ray and blood pressure; examination of the eye grounds; the testing of the urine, not only for a possible acute nephritis but for the chronic as well; eclampsia; education of the public; adequate fees for confinements so the physicians could do more for the parturients; pseudocyesis; rise of temperature four or five days after delivery, and sentiment against cesarean. A case was cited in which the patient had nephritis, hydatid form mole and phlebitis. Abortion was induced.

J. M. Keichline, Jr., Reporter.

LEBANON—JANUARY

The Lebanon County Society met in the spacious dining hall of the Keystone Hotel, January 8 at 3 p. m., and enjoyed one of the most appetizing turkey dinners. It was a good fellowship meeting and there was a large attendance. Dr. Edwin B. Marshall of Annville was elected president. The Program Committee in outlining the year's schedule, plans to hold the society meetings at various places in the county, making them of social as well as scientific value. Dr. William Guilford, dean of the profession in Lebanon County, gave some very interesting reminiscences on the early history of the society.

George R. Pretz, Reporter.

PHILADELPHIA—DECEMBER

The Philadelphia County Society and the Philadelphia Roentgen-Ray Society held a joint meeting, December 12, at 8:30 p. m., with Dr. Moses Behrend, vice president of the Philadelphia County Society, presiding.

"Our Preparation for the Roentgen-Ray Work of the War," was presented by Major Arthur C. Christie of the Surgeon-General's Office: More than one tenth of the total number of physicians in this country have received commissions in the Medical Officers' Reserve Corps. It is safe to say that this is equalled by no other profession or class. The American Roentgen-Ray Society was one of the first of the national societies to prepare its members for the inevitable struggle. Months before war was declared the president of our society, Major Cole of New York, ably seconded by Major Manges of this city, now president, assisted by a Committee on Preparedness, carried on a propaganda in military roentgenology. On the advice of this committee, founded on information received from those returned from active service, the Surgeon-General's Office decided that the roentgen-ray work in all military hospitals should be directly in charge of medical roentgenologists. To this end schools for instruction in military roentgenology were organized in nine different cities. The selected instructors, who had available adequate hospital facilities, met in New York for conference and formulated a course of instruction to be followed in all the schools. The instructors were all commissioned in the Medical Reserve Corps and assigned to duty for this special work. Selected students, also commissioned in the Reserve Corps, were ordered to report for instruction.

Special training in military roentgenology is found to be invaluable. About 200 men have finished the training at these schools; some are already in France, and others at the base and general hospitals here. At the school in New York City, where it now seems expedient to concentrate the work of instruction, we have assembled and are operating all of the various types of apparatus adopted for use in the service. The plan now includes a preliminary course at one of the medical officers' training camps, located at Fort Oglethorpe and Fort Riley. Roentgenologists will now enter the service through these training camps and after one month's instruction in the general training will take another under an experienced instructor sent for such purpose. Then those considered eligible will be sent for final training to the school in New York.

Being without precedent for our guidance in our schools for instruction and our roentgenologists being without experience in military roentgenology, we deemed it wise to standardize the methods of roentgen-ray men of considerable experience in general roentgen-ray work, which belief has been justified. We must now draw largely from among men with relatively little experience but with our well established curriculum and methods we believe that a sufficient number of men can be prepared for the roentgen-ray work of the war. Major James T. Case who was in charge of roentgen-ray work with the American expeditionary forces will be in conference with the instructors in this country that our methods may be made applicable to conditions at the front. The work of instruction will now also be greatly facilitated by the publication of a Manual of Roentgen-Ray Work. It has been found necessary to train, in addition to the medical men, men engaged in the purely technical part of the work, and for this duty men have been drawn from the enlisted personnel of the medical department and given a course of training at the Army Medical School in Washington. Men with factory experience to do the work of installation and repair of our highly specialized apparatus have been commissioned in the Sanitary Corps. Great advance has been made in the perfection and standardization of apparatus.

An important addition thereto is the "bedside unit," making possible the roentgen-ray examination without moving the patient from the bed, particularly applicable in fractures of the hip and thigh and of the chest. The unit was developed by Major J. S. Schearer, S. C., Professor of Physics at Cornell University, who has been at the head of the teaching force at the School for Instruction in Military Roentgenology in New York City. A special radiator type of Coolidge tube developed by Dr. Coolidge for use with the army portable apparatus has been made use of by Major Schearer for the bedside unit. Dr. Coolidge has met the necessity for a readily portable and reliable roentgen-ray apparatus by the development of an outfit the description of which will be published by him shortly. Other developments in accessory apparatus include the construction of a table, the top of which is made of "bakelite," a substance made in connection with the construction of aeroplanes; also a stereoscopic fluoroscope, designed by Captain Caldwell. This we expect to be one of America's great contributions for the assistance of the surgeon in his efforts to alleviate the condition of the wounded in the war.

"Pyeloscopy and Pyelography in the Differential Diagnosis of Renal Conditions with Special Reference to Calculi" was presented by Dr. Willis F. Manges. Pyeloscopy is a term used to describe the fluoroscopic observation of the flow of the opaque solution into the kidney pelves and calices. By the combination of pyeloscopy and pyelography we hope to show the importance of differential diagnosis in renal conditions, and especially in the case of renal calculi. The radiologist must depend on the cystoscopist to catheterize the ureters and manipulate the apparatus for the injection of the opaque solution. Pyeloscopy and pyelography are, of course, supplementary to clinical and other laboratory methods of diagnosis, including radiography. It is seldom, perhaps, that all of the different phases of the diagnosis are clear. The subjective and objective symptoms may be obscure, blood may or may not be found and pus may or may not be present, the radiograph may be negative and the kidney function tests may be misleading. Should any or all of these phases in the diagnosis be positive, pyeloscopy and pyelography are indicated and, if successfully carried out, are of real value.

A number of slides were shown, the last presenting an unusual point in differential diagnosis. In this case a mass was present in the right upper abdomen, having the size, shape and the firmness of a kidney. Many of the symptoms were referable to the kidney, especially pain and tenderness in the loin. With one hand on the abdomen and the other on the back the mass could be felt by both hands and it was rather freely movable. A definite shadow appeared on the radiograph, having a shape similar to that of the lower pole of a kidney, but perhaps more dense. During the pyeloscopic examination the mass could be felt and its shadow could be seen on the screen, so that, with an opaque solution in the renal pelvis visualizing the kidney, it was possible to observe the mobility of the mass in question and also that of the kidney pelvis. The kidney could not be displaced by palpation, whereas the mass could be moved more or less freely; it was clearly on a plane anterior to that of the kidney and moved toward the median line to such an extent that the outermost point of the kidney-calyces appeared beyond the mass. The last-mentioned observation is clearly demonstrated on the slide. At operation in this case a pendulous and greatly distended gallbladder was found. Pyeloscopy should be practiced whenever the kidney pelvis is to be injected for pyelographic purpose. The danger of overdistention is removed, flow of solution is under visual control and the pyelogram is made at the proper time.

Professor LaWall showed lantern slides illustrating a case of congenital dilatation of the colon in a child of 7 years. From the roentgenological standpoint he asked Major Schearer to explain why the shadow of the liver could not be seen through the gas area, although that organ was in its normal location.

Major Schearer: The presence of gas in any considerable amounts displacing denser material always makes it possible to have local over-exposure, so that this portion of the negative on full development will be so black as to exclude vision of all details. It is quite desirable in these cases to have the fluoroscopic examination, in which it is generally possible to determine presence and mobility of gas which then shows us a very bright spot on the screen.

"The Treatment of Epithelioma with Roentgen Ray and Radium Showing End-Results" was the title of a communication by Dr. George M. McKee of New York City, which was illustrated with lantern slides. Major William H. Stewart, also of New York, gave a lantern slide demonstration of obscure conditions in the epigastrium. A case of special interest was that of syphilis of the stomach.

Major James T. Case, recently returned from the expeditionary force in France, expressed his gratification at the preparation for war made by the roentgenologists of America. The needs emphasized by his work in France had been met even beyond his expectation. The Manual of Roentgen-Ray Work he regarded as nearly ideal as could be attained. The relationship between the roentgenologist and the surgeon brought about by the war had made possible a very admirable type of team work. Such adaptation of roentgenology to medical cases he believed would also be developed. The subject was further discussed by Professor LaWall, Major J. S. Schearer and Major Christie.

SOMERSET—JANUARY

The first meeting of the Somerset County Society for the year 1918 was called for January 15, to be held in the council chamber at Meyersdale. The day dawned with the worst blizzard of the season. All railroads were blockaded and all trains were from one to five hours late. The secretary had not sufficiently recovered from injuries received by a fall down a flight of fifteen stairs on the night of December 28, and the place of meeting was changed to his home. Notwithstanding the bad train service and bad weather there was an attendance of one-fourth of the membership.

Dr. Wilson of Somerset opened the discussion on "Some Features of Common Colds," which proved to be so important a subject that some of us will look more carefully into cough that accompanies a common cold.

The next meeting of the society will be held at Rockwood on March 19, and the feasibility of selecting some one regular place of holding our meetings will be discussed. We expect our Program Committee to be a means of good papers and good attendance for the coming year, the plan having proved so successful during the past year. Old Somerset, "The Frosty Sons of Thunder," we think is not behind other interior counties in its medical society, and we will be glad to have any wandering pilgrim of Aesculapius drop in on us when we have decided to have all the meetings at one point.

So far only two of our members are in the active service of the United States, but others have been commissioned and may soon be called.

H. C. McKinley, Reporter.

THE TRUTH ABOUT MEDICINES

NEW AND NONOFFICIAL REMEDIES

Since publication of New and Nonofficial Remedies, 1917, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Sterile Solution Coagulen-Ciba (3 per cent.) 1.5 Cc. Ampoules.—Each ampule contains 1.5 Cc. of a 3 per cent. solution of coagulen-Ciba. A. Klipstein and Co., New York City.

Sterile Solution Coagulen-Ciba (3 per cent.) 20 Cc. Ampoules.—Each ampule contains 20 Cc. of a 3 per cent. solution of coagulen-Ciba. A Klipstein and Co., New York City.

Tablets Coagulen-Ciba 0.5 Gm.—Each compressed tablet contains 0.5 Gm. coagulen-Ciba and 0.46 Gm. sodium chloride. A. Klipstein and Co., New York City.

Dichloramine-T (Calco). — Paratoluenesulphonedichloramide.—This is said to act much like Chloramine-T, but is capable of being used in a solution of eucalyptol and liquid petrolatum, thus securing the gradual and sustained antiseptic action. Like Chloramine-T, dichloramine-T (Calco) is said to act essentially like hypochlorites, but to be less irritating to the tissues. Dichloramine-T (Calco) is said to be useful in the prevention and treatment of diseases of the nose and throat. It has been used with success as an application to wounds, dissolved in chlorinated eucalyptol and chlorinated paraffin oil. Manufactured by the Calco Chemical Co., Boundbrook, N. J.

Halazone-Calco. — Parasulphonedichloramidobenzoic acid.—It is said to act like chlorine and to have the advantage of being stable in solid form. In the presence of alkali carbonate, borate and phosphate it is reported that halazone in the proportion of from 1:200,000 to 1:500,000 sterilizes polluted water. Manufactured by the Calco Chemical Co., Boundbrook, N. J.

Chloramine-B (Calco). — Sodium Benzenesulphochloramine.—It contains from 13 to 15 per cent. available chlorine. The actions, uses and dosage for Chloramine-B (Calco) are claimed to be essentially similar to those given in New and Nonofficial Remedies, 1917, for Chlorazene. This compound was introduced into medicine by Dakin. Its physical and chemical properties are similar to those of chloramine-T. Manufactured by the Calco Chemical Co., Boundbrook, N. J. (*Jour. A. M. A.*, Jan. 12, 1918, p. 91).

PROPAGANDA FOR REFORM

The Carrel-Dakin Wound Treatment.—William H. Welch writes that he was most favorably impressed with the Carrel treatment of wounds, and believes that Carrel should receive credit for calling attention to the possibility of the sterilization of infected wounds by chemical means. He holds that while undoubtedly the technic of the Carrel treatment is elaborate and requires an intelligence and skill on the part of the surgeon which cannot be counted on for the average surgeon, and that while the preparation of the neutral solution of sodium hypochlorite also requires chemical skill, surgeons should acquaint themselves with the principles and technic, and try to overcome the difficulties of applying the treatment (*Jour. A. M. A.*, Dec. 8, 1917, p. 1994).

Hemo-Therapin.—The Council on Pharmacy and Chemistry reports that, according to the Hemo-Therapin Laboratories, New York, Hemo-Therapin is a "combination of highly refined creosols and phenols (which have been detoxicated by special processes) with salts of iron, potassium, sodium, phosphorus and calcium in minute but physiologic proportions—the solution as a whole being designed to approximate closely in various fundamental details the chemistry of the blood." No statement is made, however, as to the quantities of the several ingredients, nor is any information given as to the identity of the "creosols" and "phenols," or as to the nature of the processes whereby these are "detoxicated." The Council explains that the Hemo-Therapin Laboratories ask physicians to believe that the occasional intravenous administration of this liquid will benefit or cure a long list of ailments, including erysipelas, septicemia, pyemia, purperal infection, malaria, pneumonia, typhoid fever, diabetes, chronic Bright's disease, goiter, arteriosclerosis and locomotor ataxia. The testimonials which are presented for the claims bear a striking likeness to those found in "patent medicine" almanacs. One of the cases is a woman who was bitten by a snake seventeen years ago and who, on the anniversary of the bite, suffers severely from the original bite (*Jour. A. M. A.*, Jan. 5, 1917, p. 48).

Venosal.—The Council on Pharmacy and Chemistry reports that Venosal, sold by the Intravenous Products Company, Denver, Colo., is inadmissible to New and Nonofficial Remedies because its chemical composition is indefinite; because the therapeutic claims are exaggerated, and because the composition is unscientific. Venosal is a solution of sodium salicylate containing also colchicum and an insignificant amount of iron. Since it is possible to obtain the salicylate effects promptly and certainly by oral administration, the inherent dangers of intravenous medication render its routine employment unwarranted. At this time, when economy is a national policy, a further objection to the use of Venosal is the unnecessarily high expense of Venosal itself and the administration (*Jour. A. M. A.*, Jan. 5, 1917, p. 48).

Our Archaic Patent Laws.—The reports of the Council on Pharmacy and Chemistry on Secretin-Beveridge and the Need for Patent Law Revision are opportune. At the request of the National Research Council the "Patent Office Society," an association of employees of the U. S. Patent Office, has created a committee to study the U. S. Patent Office and its service to science and to arts. There is no question that one of two things is needed: either a radical change in the patent law itself or the application of more brains in its administration. Now the United States Patent Law is too often used to obtain an unfair monopoly of a medicament or to abet quackery (*Jour. A. M. A.*, Jan. 12, 1918, p. 95).

Secretin-Beveridge and the U. S. Patent Law.—In 1916, A. J. Carlson and his co-workers demonstrated that commercial secretin preparations contained no secretin, and that secretin administered by mouth or even into the intestine was inert. Yet a U. S. patent was subsequently issued to James Wallace Beveridge, for a process of preparing secretin preparations which would contain secretin when they reached the consumer, and in a form resisting destruction in its passage through the stomach. At the request of the Council on Pharmacy and Chemistry, A. J. Carlson and his associates studied the stability of the secretin made according to the Beveridge patent. The investigation shows that the patent gives no process for the manufacture of commercially stable secretin preparations, nor any means for preventing the destruction of secretin by the gastric juice when administered orally (*Jour. A. M. A.*, Jan. 12, 1918, p. 115).

Need for Patent Law Revision.—The Council on Pharmacy and Chemistry publishes a report prepared by its committee on patent law revision, which is an appeal for an amendment of the patent law which governs the issuance of patents on medicinal preparations, and more particularly for a revision on the procedure under which such patents are issued. The report points out that to increase our national efficiency, the government must protect and stimulate science, art and industry, and at the same time curb waste of the country's resources; and that, to this end, the patent office should encourage discoveries which go to increase national efficiency, and refuse patent protection when such protection is not in the interest of national efficiency, conservation of energy and material resources. The report presents a considerable number of specific instances which demonstrate that patent protection has been given where it was not deserved and not in the interest of the public. The report concludes with a reference to the investigation of a patent granted for a preparation of secretin, apparently without any attempt to confirm the highly improbable claims of the patent applicant (*Jour. A. M. A.*, Jan. 12, 1918, p. 118).

Arsphenamine.—No, this is not a new chemical; it is simply the name adopted by the Federal Trade Commission for the hydro-chlorids of 3-diamino-4-dihydroxy-l-arsenobenzene—in other words, salvarsan. The three firms which have been licensed to manufacture this drug are permitted to have their own trade names for it, but the official name "arsphenamine" must be the prominent one on the label of all brands. Hence physicians should at once make it a point to learn and use the name "arsphenamine" (*Jour. A. M. A.*, Jan. 19, 1918, p. 167).

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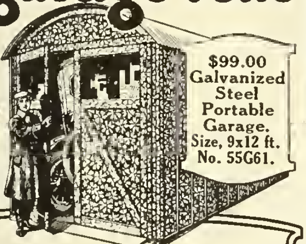

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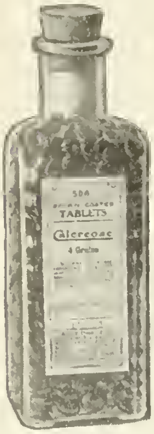

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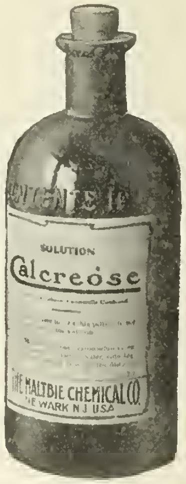

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Next Annual Session: Philadelphia, Sept. 23-26, 1918

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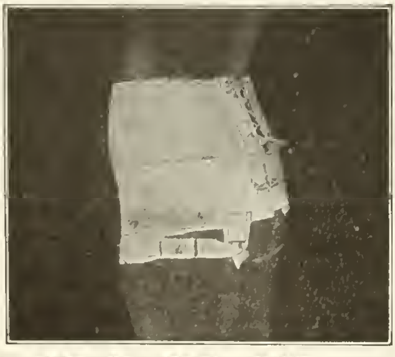

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THE PENNSYLVANIA MEDICAL JOURNAL
Official Organ of the Medical Society of the State of Pennsylvania

VOLUME XXI
NUMBER 6
ATHENS, PA., MARCH, 1918
SUBSCRIPTION:
$2.00 PER YEAR

FIFTH CONFERENCE OF INDUSTRIAL PHYSICIANS AND SURGEONS

HELD UNDER THE DIRECTION OF THE DEPARTMENT OF LABOR AND INDUSTRY OF THE COMMONWEALTH OF PENNSYLVANIA

HALL OF THE HOUSE OF REPRESENTATIVES, STATE CAPITOL, HARRISBURG, NOVEMBER 20, 1917

MORNING SESSION

The meeting was called to order by the Chairman, Dr. Francis D. Patterson, Chief, Division of Industrial Hygiene and Engineering, Department of Labor and Industry, at 9:50 a. m.

Dr. Patterson: The meeting will come to order. As you know, this is our Fifth Conference of Industrial Physicians and Surgeons; and, to my mind, it is one of the most important conferences that we have ever held, for the reason that never in the history of medicine has there been such a vital need for all of us to do all that we can to help conserve the lives and health of those who toil, be it either in our factories or at the front in France. It is my great pleasure and privilege, this morning, to introduce to you the Acting Commissioner of the Department of Labor and Industry, Mr. L. R. Palmer, who is now in charge of the department, owing to the fact that our Commissioner, Major John Price Jackson, has entered the service of his country and is on active duty in the Corps of Engineers of the United States Army.

ADDRESS OF WELCOME

MR. L. R. PALMER
Acting Commissioner of the Department of Labor and Industry
HARRISBURG

I regret, with you, that this part of our program cannot be carried out as it was originally intended. We had hoped that our Commissioner, now our Major, would be here to extend to you the word of welcome; but we all feel with him that in this great industrial state there is no more important organization than that of the Industrial Physicians and Surgeons. I believe that you men appreciate more than the most of us that we are really at war; and I think that it will be you men who will take the real active part in the work that is going to fall to us when our men come back wounded from the front. It will be with your assistance that we shall be able to repair them and either return them to the front on the firing line, or re-enter them in the trenches of labor here at home to produce the supplies necessary to maintain our allied armies in France, fighting for the safety of world democracy.

It is not my purpose to attempt to take the place of Major Jackson at this time in endeavoring to present the purposes and policies of the department as he would have done. I want to say, though, this much, that our department appreciates your co-operation, and that we pledge ourselves with you to speed the dawn of that day when democracy shall be privileged to exist unmolested by the malignant purpose of a militant autocracy saturated with the accumulated crimes of the darkest and most barbaric ages and the day when "that predatory Potsdam gang" shall surrender its claim to divine right or else be wiped clean from the face of a regenerated world.

Dr. Patterson: Each particular industry has its own particular problems yet to be solved; and so it is going to be our great privilege today to hear what some of these problems are, and what means seem to be necessary in order to solve them. There is no man in the mining service who has had a wider and more extensive experience with the particular problems that affect the industrial surgeon in handling his work in the mine than our good friend, Dr. S. P. Mengel, chief surgeon of the Lehigh Valley Coal Company of Wilkes-Barre, and it will be our great pleasure and privilege to hear what he can tell us of the problems that daily confront the surgeon who has charge of the health of those who toil that earth's hidden treasures may be available for our use.

SOME MEDICAL AND SURGICAL PROBLEMS AND THEIR SOLUTION

FROM THE POINT OF VIEW OF THE MINING SURGEON

SAMUEL P. MENGEL, M.D.
Chief Surgeon, Lehigh Valley Coal Company
WILKES-BARRE

I feel particularly grateful to Dr. Patterson for having placed me on his program first, so that I shall be able to enjoy a part of the meeting, or the better part of the meeting.

Dr. Ogle, in the Forty-fifth Annual Report of the Registrar-General, has shown that coal miners stand at the top of the list as regards comparative immunity from phthisis and other lung diseases in dust-inhaling occupations. Dr. Osler says, "Even when there are physical signs of cavity, tubercle bacilli are not necessarily and, indeed, in my experience are not usually, present. It is remarkable for how long a time the coal miner may continue to bring up sputum laden with coal particles, even when there are only signs of a chronic bronchitis."

The character of the dust plays a more important rôle than the amount inhaled. The particles of dust from stone or iron are sharp and irritating, and in time will cause the lung tissue to break down, consequently a large proportion of these workers die of tuberculosis. The coal dust or carbon particles being of vegetable origin, are not so sharp and consequently are not so irritating. On this account tuberculosis is not a common disease among miners.

Dr. L. I. Lubin, statistician of the Industrial Department of the Metropolitan Life Insurance Company, has shown in an extended health survey of the anthracite coal regions that there is a lower mortality among miners, including all fatalities, than there is in the agricultural districts. However, it is a well-known fact that long-standing cases of anthracosis are very likely to cause chronic bronchitis and emphysema. Continual exposure to the dust will, in years, produce such an increase of connective tissue that the blood supply is far from normal, and it is these cases that, after exposure to tubercle bacilli, are more susceptible to infection. When these miners expectorate their dust-laden sputum, the tubercle bacilli may gain access to the diseased lung and cause genuine tuberculosis.

These cases form only a small proportion of the cases of tuberculosis occurring in the anthracite coal fields, the majority of the cases occurring in those who are engaged in rock work as drillers, etc.

That the improved ventilation in the mines has lessened tuberculosis and lung conditions there is no question. In the construction of the St. Gotthard tunnel there was a great loss of life, due to poor ventilation and no control of the dust. In the construction of the Simplon tunnel, twelve and one-fourth miles long, the longest tunnel in the world, phthisis was extremely infrequent, due to the volume of fresh air conducted to the head of the tunnel and to the close medical inspection of the men that were accepted to work. The machines were worked under hydraulic pressure and water which was introduced at the point where the rock was pierced kept down the broken stone, prevented the formation of dust, and washed out the rock debris in such a way that the work was not dusty at all.

There are but few instances today where water is used in the drilling of rock in the anthracite coal fields. In a recent conversation with one of our engineers, I was informed that several of the larger contractors are now equipped to do this work, using water or steam to allay the dust. The men, I am told, have also awakened to the situation and the danger they were exposed to, and are now seeking employment with those who are equipped to do this work properly by allaying the dust.

This appears to be a grave question, for, as we know, the great majority of cases of tuberculosis occurring in the anthracite field occur in the rock workers, and naturally all these cases, whether of sickness or of death, are charged to the industry, that of mining. We thoroughly believe, with this danger eliminated or corrected, the cases of tuberculosis occurring in the anthracite field would be reduced to a minimum; in fact, there would be very few cases of tuberculosis, if it were not for those occurring in the rock workers.

Early legislation should be enacted to correct this dangerous practice and make it obligatory for all contractors to equip the rock machines with the necessary devices for the proper control and elimination of dust.

Probably no medical or surgical subject has been or is now of more interest to the industrial physician than the treatment of wounds. It has been hoped, expected, and indeed taken for granted, by many that some specific method for the treatment of septic wounds would come, or had come from the vast experience of the army surgeons in this World's War. Judging from authoritative reports and the messages brought to us by men of international reputation who have had extensive experience abroad, we must acknowledge our hopes up to the present time have not been realized and we are probably as far out at sea in this matter as before.

The wounds received in the authracite coal region are about as varied and ofttimes as severe as one can possibly imagine. They vary from a slight bruise or scratch to the most extensive contusions and lacerations, frequently multiple in number, and complicated with almost every imaginable injury that trauma may produce.

The slight wounds, such as occur on fingers, hands, abrasions of the scalp, etc., often require but little treatment other than the first-aid dressing. Yet many of these slight or rather trivial injuries are the cause of some of the most extensive cases of infection. Many of these wounds are not reported at the proper time, the employees believing they will not amount to much, or that they are competent to treat the wounds themselves. They often apply some dirty ointment or lotion with an unclean or filthy cloth or bandage and the physician is consulted when a severe infection has occurred.

The severe flesh wounds caused by falls of rock and coal or blasts often tax the skill of the surgeon to no small degree. They are usually not only extensive, deep and multiple, but often contain powder, fragments of coal, rock and debris, such as pieces of the miner's clothes, etc. Their edges are often devitalized and necrotic. Every wound not made under surgical precautions must be considered as infected, regardless of its source, size, symptoms, etc., and so with these wounds occurring in the coal regions, while the particles of coal and rock themselves may not be virulent, there is often so much debris thrown into the wound, and the soft parts are so badly traumatized, that they are almost from the beginning badly infected wounds.

Upon the treatment of these wounds depend the time of convalescence of the patient, the function of the member, and often the life of the injured. The first dressing is the most important one. It should be done early and under the best aseptic and antiseptic precautions possible. The surgeon's instruments should be thoroughly sterilized and he should wear gloves. The wound should be thoroughly cleansed, foreign bodies removed, and the necrotic, badly traumatized tissues removed. Drainage should be established (gauze should not be used for drainage); boiled rubber bands, braided strands of silkworm gut, or in large wounds, rubber tubes should be used. If the surgeon makes his first dressing with as great precautions as he would use to dress an abdominal wound after a section, he will have fewer cases of infection and far less dressings to do.

Regarding the modern antiseptics, you are doubtless all familiar with the Carrel-Dakin solution and the method of its application. Sir Berkeley Moynihan says: "From a military point of view the Carrel-Dakin method is an extremely difficult one to practice. Many think that the success of this method is due to the fact that the patients are received early, are placed at once under this careful, rigid technic and are detained for long periods of time. The great fault of the Carrel-Dakin method is that if it breaks down it fails lamentably."

Dr. George W. Crile, in speaking of the Carrel-Dakin method, says: "If there is plenty of help, and if well done, the wounds do beautifully. I have never seen any wounds do better than those in which a typical and perfect Carrel technic has been carried out from the beginning to the end without a slip."

This has been the experience of the writer, in the use of the Carrel-Dakin method in the Wilkes-Barre City Hospital, where it was possible to follow out the exact technic and method as outlined by Dr. Sherman in his article, published in *Surgery, Gynecology and Obstetrics*, March, 1917. Owing to the irritating qualities of the Carrel-Dakin solution, its unstableness and the difficulty in carrying out the technic, it is not a practical dressing for office use. We believe the Carrel-Dakin method probably the best antiseptic and method for the treatment of wounds where it is possible to follow out carefully and exactly the technic as outlined.

Sir Rutherford Morrison introduced a method consisting of the smearing of the wound with what he calls bipp. This consists of one part of bismuth, two parts of iodoform and one part petrolatum. After free mechanical exposure of all parts of the wound, the scraping away of all granulation tissue and the removal of all dead and seriously injured portions and all fragments of bone, the wound is dried with gauze and very thinly smeared with this preparation, after which it is closed without drainage, immobilized, and left for ten days. These patients were found to do remarkably well, but it was also found that if the exact treatment of the wound, as pursued by Sir Rutherford, was thoroughly carried out and these wounds closed up without smearing them, they did equally well.

There have been excellent reports from the use of chloramin-T and dischloramin-T. Dr. Lee of Philadelphia reports 7,228 cases treated with dichloramin-T, and reports of its having been used in many war wounds in France. It is nonirritating and there is an enormous difference between these agents and Dakin's solution in the speed of disinfection, they being used in strengths of from twenty to forty times greater than is possible with the hypochlorites. These dressings will last from eighteen to twenty-four hours.

In a clinical report of the Pennsylvania Hospital, the results in 160 completed cases treated by the Carrel-Dakin method, including wounds of the soft tissues, tendons, bones and joints, showed discharge with recovery in one third less time than was required in the other hospitals of the city. The comparison was made by means of insurance statistics. The same report states that during the last two months the complicated and expensive Carrel-Dakin technic has been replaced by the routine use of daily dressings of, first, 5 per cent. and later, 7.5 per cent. of dichloramin-T in chlorinated eucalyptol and liquid petrolatum. In this last group of eighty-two completed cases the time required for healing was 16.3 per cent. less than in the former.

According to these reports it certainly appears as though this would be the ideal dressing for the treatment of wounds, especially applicable for the industrial physician in his office and dispensary work.

The lesson that the industrial physician may learn from the experiences of those abroad is that the wound should be thoroughly cleansed of all foreign material, that it should be cleared of all necrotic and necrosed tissue, after which it should be dressed and thoroughly *immobilized.*

There is no problem which taxes the skill, patience and ingenuity of the surgeon to a greater degree than the treatment of fractures. Especially does this apply to the surgeon in the coal fields. No other class of injuries presents so many phases, which subject the person in charge and the results obtained to so sharp criticism. As a consequence, the urgent demand for well-defined and well-recognized standards is being demanded of all who are directly or indirectly engaged in the treatment of fractures and interested in their end results.

It is not my purpose to enter into the discussion of the various methods, appliances, etc., used in the treatment of fractures, but simply to call attention to this most important subject. Take stock account, as it were, and ask ourselves the question, "Are we doing all in our power to give to these unfortunate victims a perfect functionating member at a minimum loss of time and suffering?"

Dr. Moorhead, in his excellent work, says: "The main cause of impaired union is imperfect setting and immobilization of the parts, resulting in separation of the fragments."

By the use of the roentgen ray we are enabled to diagnose obscure fractures and also determine how successful our attempts have been at their setting and reduction. Skiagraphic errors must always be borne in mind, and all precautions taken so that no false shadows are cast. It is therefore of the utmost importance to intrust this work only to those who are skilled in the use of the roentgen ray, those who are not only capable of taking the radiograph but who are also competent to render an intelligent interpretation of the same.

The majority of fracture cases should be treated in the hospital, and every hospital should be supplied with a complete and scientific equipment for the diagnosis and treatment of these cases. The public is becoming more intelligent on this subject daily and is growing more alarmingly exacting. The industrial world is interested from a financial standpoint and is demanding better results. Not only must the hospital be equipped with the necessary scientific appliances and apparatus, but the work must be done by men skilled and trained in this important line.

No longer will the inexperienced resident physician be allowed to set and dress a compound fracture with probably no other attendant present than a nurse, while his chief is engrossed with a hernia or appendix operation. It would be far better for the experienced surgeon to assume charge of the fracture and have the resident physician attend to the appendix or hernia.

The open treatment of fractures has found many advocates during the past few years, and probably as many able men have come to the defense of the closed method. Robert Jones of Liverpool claims perfectly satisfactory results in 90 per cent. of cases by the closed method. Lane, on the other hand, is inclined to do an open operation in practically all his fracture cases. Between two extremes there is, no doubt, a happy medium, and circumstances surrounding the case and the experience of the surgeon are essential factors in deciding the question.

Scudder says: "It is of course necessary for practitioners of surgery to assume that there is general agreement that operation is ordinarily wise upon ununited fractures and upon fractures which have united with distressing deformity and with much impairment of function. Deficiencies in nonoperative treatment, which unquestionably do exist, should be remedied, not by operating more frequently, but by exercising greater care in the employment of the fundamental principles recognized the world over as underlying the nonoperative treatment of all fractures, namely, general anesthesia, traction, countertraction, pressure, counterpressure, the exact application of anatomic knowledge, immobilization, comparative use of the roentgen ray, massage, the care of the joints adjacent to the injury, and thus ultimately securing approximately anatomic form and perfect function. Whenever and wherever these basic principles are applied intelligently and consistently the results are uniformly good and the operative margin narrow."

From Jan. 1, 1916, to Sept. 30, 1917, we have had 377 fractures. This included all fractures of fingers and toes, and of smaller bones of the hand and foot. Most of the cases outside of those of the smaller bones were treated in hospitals. The following will give you an idea of the average time lost by the injured:

Bone Fractured	Kind of Fracture	Number	Time Lost Weeks
Radius	Simple	21	17½
	Compound	2	24⅔
Ulna	Simple	6	8⅓
Both ulna and radius	Simple	7	10½
	Compound	2	7 4/6
Pelvis	One fatal	7	38
Femur	Simple	7	21
	Compound	6	32⅙
Tibia	Simple	27	14 3/9
	Compound	8	31
Fibula	Simple	13	12
	Compound	3	22
Both tibia and fibula	Simple	29	21
	Compound	10	43⅗

Many of these fractures are of the most severe type, often accompanied with great destruction of the tissues and often complicated with other lesions.

You will notice that the time of disability for fractures of the tibia and fibula, when they occurred alone, was fourteen and twelve weeks, respectively, for simple, and thirty-one and twenty-two weeks for compound, as compared to twenty-one and forty-three weeks when both bones were fractured.

The question arises: Can we, by closer study of our cases, by greater conscientious efforts and by more scientific methods, reduce this time of convalescence and give to this class of patients better function and better results?

In the treatment of burns, judging from a rather limited experience in the use of paraffin preparations, I believe that they have proved all that is claimed for them. Especially are they applicable to burns of the first and second degree, and more especially where large surfaces are involved and where the time consumed in dressing is an important factor. The technic is simple, practically painless as compared to the other methods of dressing and affords a far more cleanly dressing than the smears, ointments, etc., that have so long been used.

Large surfaces may be dressed in a remarkably short space of time, thus conserving the strength of the patient, which is so essential in extensive wounds of this character.

Too much emphasis cannot be laid upon the necessity of preventing contractures, webbing and unsightly scars of the parts, especially in such regions as between the fingers, toes, thighs, axilla, neck and ears. These complications can and should be avoided. They almost invariably require some mechanical device not only to prevent the surfaces from coaptation but also to keep the parts over corrected or extended. In case of the thighs or perineum the legs should be widely separated and mechanically kept in that position. If the axilla is involved the dressing should be done with the arm lifted over the head and kept that way. In burns of the neck the head must be kept turned in the opposite direction from the burn and mechanical appliances, such as high collars, plaster casts, etc., made and worn to maintain the head and neck in such position until the burn is entirely healed. In severe burns involving these regions, especially burns of the third degree, concentric strapping with adhesive plaster probably gives as good or better results than any other method.

In conclusion, allow me to call your attention to Sir Berkeley Moynihan's most excellent paper on "War Surgery of the Lung and Pleura." He calls attention to the severe wounds of the lung and pleura often encountered in the wounded soldier, and as the surgeon in the coal regions is often required to treat and care for the same condition, it will be appropriate to consider this subject for just a few moments.

Wounds of the lung and pleura have usually been treated expectantly by such measures as pressure, packing, inserting drainage tubes and, as a last resort, radical treatment, resecting one or more ribs and inserting drainage tubes, etc. Dr. Moynihan's method of dealing with these wounds and with foreign bodies in the lung is so entirely different from anything before attempted that it is of especial interest to know what he and his colleagues really have accomplished in this line. He claims that approximately 20 per cent. of gunshot injuries of the chest that get into the hands of the surgeon are fatal. If the foreign body entering the lung is small, or if it causes no symptoms, treatment is preventive; let it alone, closing and dressing the wound in the chest wall.

If the foreign body is large, causing symptoms, as hemorrhage, sepsis, etc., whether the wound of the lung or the foreign body be large or small, whether it be situated anteriorly or posteriorly, in the apex or in the base, radical treatment is identically the same, namely, to make a longitudinal incision along the border of the fourth rib, separate the rib near the sternum, and fracture it outward, incising the pleura, elevating the upper ribs with a specially devised retractor, then separating with the gloved hand all adhesions between the lung and pleura, passing the hand entirely around the lung, and finally delivering the lung on the chest wall. He states that the foreign bodies are felt with ease in the lung tissue, and compares the searching for these bodies to the searching for foreign bodies in the soft sea sponge.

These foreign bodies are extracted, other necrosed tracts are removed and the wounds are closed with sutures, similar exactly to those inserted to control hemorrhage of the liver. The wounds are then dried with an application of ether, all hemorrhage is stopped, the lung is replaced and the inserted pleura is entirely closed. This, he claims, is the most difficult part of the operation. The chest wall is closed without drainage. After its closure, the ether gas in the pleuritic cavity is withdrawn by inserting a needle in the sixth interspace in the posterior axillary line. Dr. Moynihan claims that these cases, with absolute rest, convalesce as well and rapidly as does a patient after an interval appendix operation.

We believe that Sir Berkeley Moynihan has rewritten the chapter on the surgery of the lung and pleura. And so, let us hope and trust that out of this lamentable struggle of gigantic forces abroad, this war of science, may come a solution of our medical and surgical problems, emphatic and final, which will prove a benefit to the physician and surgeon and a boon to all mankind.

Dr. Patterson: I am sure that we cannot thank Dr. Mengel enough for his splendid consideration of the important subject that he has so clearly put before us. The next paper in the symposium will be on the subject of "Some Medical and Surgical Problems and Their Solution, from the Point of View of the Public Service Corporation Surgeon." We all appreciate that, in our present crisis, if there is any one industry that must not break down it is the public service corporations, the railroads, the gas and electric light companies, the telephone and the telegraph; so it is with great pleasure that I introduce to you this morning one whom I know will give us appropriate light on the subject, Dr. N. M. Jones of the East Ohio Gas Company, Cleveland, Ohio.

SOME MEDICAL AND SURGICAL PROBLEMS AND THEIR SOLUTION

FROM THE VIEWPOINT OF THE PUBLIC SERVICE CORPORATION SURGEON

N. M. JONES, M.D.
Surgeon, East Ohio Gas Company
CLEVELAND, OHIO

When I received the program of this meeting late Saturday afternoon, I was aghast to find that I had, in some incomprehensible manner, completely misunderstood my friend, Dr. Patterson's invitation, and had prepared a paper entirely foreign to the subject he had assigned me. As a matter of fact, I had appropriated to myself the topic upon which Dr. Evans will so ably address you this afternoon. I can assure you that I have a very remarkable paper in my pocket upon "The Relationship of the Public Service Corporation Surgeon to the Present Crisis"; a paper replete with good advice, high patriotic sentiments and camouflage. That paper I shall not deliver. For the faults and demerits of what I *shall* have to say to you I must crave your indulgence upon the plea of the shortness of time remaining between the discovery of my mistake and this occasion.

Many and various, indeed, are the medical and surgical problems which confront the public service corporation surgeon. As my own work as surgeon for the East Ohio Gas Company and the various other public service corporations with which I am connected is largely surgical, I must leave to others to discuss the larger medical problems at length. There are, however, some medical phases of the question upon which I will touch.

The physical examination of employees is, I take it, a question upon which we of the profession are fairly agreed. Yet it is not so with employer and employees, at least in my experience. Many employees object to it as an infringement on personal liberty, and their objections at times have been most emphatic. This has, I presume, been met by all of you. The most effective arguments which I have found in answer to these objections have been, first, to point out the personal benefit to the employee of finding out his own physical condition free of cost, a service not obtainable by him as a private individual for less than from five to ten dollars; and, secondly, to direct his attention to the lessened hazard of infection from fellow workers by the elimination of tuberculars and syphilitics. More surprising, however, than the opposition of the employee is that of the employer, and I must confess that in one instance I have been unable to overcome it. In this case the opposition has been based largely upon the cost of service, and I have not been able to convince this corporation that the cost is far more than offset by the increased efficiency. Two recent examples in the service of this company should have taught the lesson, but as yet they have not done so. One case was that of a laborer employed some three or four months previously. A foreman reported that he had not been at work for several days, and upon investigation it was found that he was ill. I was asked to see him and found him suffering from a strangulated femoral hernia, which he claimed had been caused by heavy lifting some four or five days previously during the course of his employment. Upon opening the sac I encountered some eight inches of gangrenous gut and had to resect. The patient died of delirium tremens two or three days later. Had this man been examined previous to his employment he would have been rejected upon two counts—alcoholism and hernia—and the company would have been spared a costly lawsuit. The other was the case of a tubercular, in rather advanced stage, the expense of whose protracted illness the company was induced to bear, though they were unable to repair the harm of having exposed to his infection two of his fellow workers whose tuberculosis I was able to trace to this case.

What to do, then, with tuberculars, luetics, alcoholics and the sufferers from gonococcic infection has been the principal problem encountered in the purely medical phase of my work. It may be of interest to you that in two of my companies practically 8 per cent. of those examined have been rejected for one or the other of these four causes.

There is a quasi public, medicolegal aspect to one phase of the work of the surgeon for public service corporations in that he has frequently to evaluate the effect of injuries, estimating for the legal department the probable results, in lessened earning capacity and efficiency, of a manifold variety of disabilities, and has to sift out the true sufferer from the false, the honest injured individual from the malingerer. I am meeting with many such problems in my work, and one of them has a purely medical aspect, viz.. that of chronic gas poisoning. The East Ohio Gas Company supplies natural gas to a large majority of the homes in Cleveland and other Northeastern Ohio cities. They have had a great deal of trouble with leaky mains, caused, I am told, by electrolysis. On numerous occasions they have been sued on the allegation that gas had percolated through the soil into houses and caused chronic gas poisoning. In one case, now pending in the courts, it is claimed that inhalation over a protracted period of time has caused chronic myocarditis in a child of 8; in another that it has caused grave anemia in a woman of 35, and in a third that it has resulted in deafness and polyneuritis in a man of 50. It is possible to find very little in the literature bearing on this phase of the question, certainly nothing to indicate that the variety of these allegations has any justification in fact. I hope that the discussion may shed some light upon this rather obscure question. Numerous other cases might be introduced demonstrating the need of constant alertness on the part of the surgeon in guarding public service corporations against unjust and manufactured claims.

Let us turn now to the surgical side of the question. Naturally, the problem of infection is the first to invite our attention. My most perplexing difficulty in this connection is that of how to avoid delay in reporting minor lacerations and abrasions. In common with most of you, I fancy, I have found that no infections develop when the iodin technic is carried out within ten hours from the time of the injury. Threats, pleas, and even prayers, however, have had no effect; education has accomplished little; they will not report minor injuries, and nothing is left but to combat the infection. I am now trying out dichloramin-T, and so far, in my hands, it gives promise of bearing out the high claims that have been made for it. In hospital cases I have found the Carrel-Dakin technic wonderfully satisfactory, but in ambulatory cases it has not worked so well in my experience. Some ambulatory cases are comparatively trivial and respond nicely to moist saline or boracic packs. Where there is any indication of spreading infection, particularly if of the streptococcic type, hospital care is insisted on. Here the warm saline bath has been of greatest use. An interesting case, occurring several years ago, was that of a child of 4 who was run over by one of the company's trucks, which passed over his pelvis. Strange as it may seem, there were no fractures. The child's perineum was, however, burst open as though it were a ripe plum. From the base of the scrotum back to the sacrum the ischiorectal fossa was widely opened up, exposing the rectum and coccyx. The wound extended up onto the sacrum nearly to the lumbosacral articulation. An attempt at immediate repair by suture was made. Infection, however, promptly ensued, and with it extensive sloughing, so that almost the entire sacrum was denuded. Under continuous saline bath, and later exposure to direct sunlight, the infection subsided and I was able to skin graft, obtaining a perfect result from this comparatively serious injury. Much of the success in this case is attributable to the watchful care of the house officer in attendance, Dr. T. H. Jones, now of the Army Medical Service.

As surgeon for a gas company I, of course, meet with many burns, and I feel that we have still much to learn in their treatment. No method thus far has given me entirely satisfactory results. My experience with the paraffin film has been somewhat disappointing. I know of no method which gives such prompt relief from pain, but I know of no method, with the possible exception of the time-honored carron oil, which is so regularly accompanied by a large amount of pus. For burns of limited extent I have found the 1 per cent. solution of picric acid and aluminum acetate in olive oil the most satisfactory, though it is apt to be painful for a few moments after application. Healing is, however, usually undisturbed by infection, and so far as I can see scar tissue formation is no more troublesome than after the use of ambrine. For extensive burns I can find no substitute for constant immersion in saline baths at body temperature. I have now under observation a woman who was terrifically burned in a gas explosion in her home. She was approaching term and a living child was born an hour after her arrival at the hospital. From her knees to the top of her head she is one mass of charred flesh. Both breasts are burned nearly off. Such cases are, of course, among the most difficult we have to handle and are almost regularly fatal. I have tried the electric light in a few similar cases, but it has not proved as satisfactory as the bath. The great drawback to the latter method of treatment is the great amount of work it puts upon the hospital personnel.

Dog bites have been exceedingly frequent. Not a week passes but from two to five meter readers are bitten. In 287 cases no case of rabies has been encountered. But one case of severe infection has been met with among these 287 cases. When an employee is bitten by a dog he runs immediately to the surgeon; when he cuts his finger on a nail he binds a chew of tobacco on it and forgets it until he has pain in his axilla; hence the low incidence of infection in dog bites. The one infected case was that of a young man who had four deep lacerations of the dorsum of the right hand, exposing the extensor tendons. On account of hemorrhage he was taken to a neighboring drug store, where the corner doctor sewed it up very neatly, accurately approximating the edges and leaving no drainage, a beautiful piece of needlework but very poor surgery. When seen on the second day, severe infection was present, as might have been expected. This was before the day of the Carrel-Dakin method and it was healed with continuous saline bath, and the result was some impairment of function. Routinely, dog bites are swabbed with pure phenol, followed by alcohol and iodin, and, as indicated, give very little trouble.

Chronic and recurrent synovitis of the knee joint has given me a considerable amount of worry. It is difficult to persuade patients and claim agents that a number of days' rest in bed with immobilization is necessary "just because a man has water on his knee." One case, involving a disability of fifty-two and another of over thirty weeks, both from neglect in following out directions at the time of the primary injury, will, I trust, teach a much needed lesson. A condition which I am constantly seeing in meter readers and collectors who have a great deal of walking to do is a tenosynovitis of the tendo Achillis. Here little difficulty is met with, since pain, the best friend of the surgeon, enforces rest, the specific.

My practice in the treatment of fractures has been along the lines of conservation. I believe that much harm has been done by incompetent operators in the open treatment of fractures. Certain cases, and among them I may mention fractures of both bones of the forearm in the middle third, high fractures of the femur and occasionally fractures of both malleoli with dislocation of the foot, require operative interference. When, however, good functional results can be obtained by conservative methods, even though the results may lack something in anatomical perfection, I am not in favor of operating. In the limited time at my disposal I cannot, of course, enter into a complete discussion of the comparative merits of the open and the closed methods. I regret that I am unable to give statistics at this time, but can only assure you that with a fairly considerable experience with both methods, and despite the fact that in my own work I have had no unfortunate results from the open method, I am more and more inclining to conservatism. Years ago, at the college of which I have the honor to be a graduate, there was a rough and ready old professor of surgery. In those days, much as now, each surgeon had his own variety of splint for every fracture to which human bone is heir. In lecturing on fractures it was his wont to rob the hospital splint room of all the splints it contained, describing each at length and piling them up before him on the old wooden table in the amphitheater. After he had talked an hour or more, indicating the varieties of fracture for which each was adapted, he used to sweep them all onto the floor with one gesture and say, "Gentlemen, they are not any of them worth a damn; all you need to treat fractures is a piece of board, a jack-knife and brains." He was pretty nearly right, especially in regard to the brains.

In the treatment of fractures and mangling injuries to members the surgeon for public service corporations must sometimes be influenced by the medicolegal aspects of the case. Whether rightly or wrongly, we have to consider, in cases where there is liability, what effect a certain course of action will have on the lawsuit which is sure to follow. A case in point might be of interest: Shortly before the meeting here, in February last, a man was brought into my service who had been injured in an interurban trolley wreck. There had been a compound comminuted fracture of the head of the tibia and fibula. The car had caught fire and the leg had been badly burned also. The claim agent importuned me to save the man's leg. I was about ready to amputate, however, owing to the very bad condition of the leg, infection having occurred, when I listened to Sherman's paper here and returned home fired with enthusiastic ideas of emulating him. Carrel-Dakin saved his leg. He has, however, great deformity, three inches shortening, a peroneal palsy, and $25,000 which the jury has just awarded him. It would have cost the company about $6,000 had I cut his leg off at the knee joint, and that amount would have purchased an artificial leg far superior to the dangling member he now has. Another problem that has interested me as a public service corporation surgeon has been that of the so-called traumatic hernia. My own position has always been that no hernia can result from any one lifting strain, no matter how severe, and that for a hernia to be considered traumatic in origin it must result from direct and great violence in the neighborhood of the hernial orifice and be accompanied by immediate evidence of shock and collapse.

Gentlemen, I trust that in this rather cursory survey of the field, some questions will be suggested for your further discussion.

Dr. Patterson: I am sure that we are all very much indebted to Dr. Jones for his able presentation of this subject. The next paper in our symposium is on the subject of the hazards of the chemical industry. The chemical industry seems to me almost like the revelation of some wonderful alchemy of old, whereby those who labor in it take the treasures of the earth, abstract the elements from the air, and by some mystical formula, blend them together, on the one hand, into perfumes of marvelous sweetness, and, on the other, into dyes of wonderful colors, and still, again, into explosives of extraordinary force. I know of no man in this country who has made a more careful and systematic study of the many problems that occur in the chemical industry, and he needs no introduction to this body, than our good friend, Dr. J. W. Schereschewsky of the United States Public Health Service, Pittsburgh, who will now speak from the "Point of View of the Surgeon in the Chemical Industry."

SOME MEDICAL AND SURGICAL PROBLEMS AND THEIR SOLUTION

FROM THE POINT OF VIEW OF THE SURGEON IN THE CHEMICAL INDUSTRY

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I hope I may be able to live up, although very slightly, to the introduction that our chairman has given me. I regret very much the fact that I was unable to prepare a set address for this occasion, because I was called away by telegram and could not get back in time to do so.

I am not, of course, a surgeon in the chemical industry, but it has been my fortune recently to carry on some studies in the chemical industry. I should, therefore, like to say a few words about the way the problems in that industry impress one who studies it from the outside.

I need hardly remind you that the chemical industry is our fundamental industry. Its importance, great as it always has been, has been emphasized as never before by our entry into this war. Without it every gun at the front would be silenced; motor transportation would, indeed, be most difficult, if not impossible; our fields, which we now wish to call on for added fertility, would soon become sterile. I believe that in every sense we may regard the chemical industry as the most important aid to carrying on this war to a decisive victory.

For this reason, under the conditions as they exist in the chemical industry, the special problems that are presented in regard to the health of the men in that industry now assume a paramount importance. One of the most remarkable features of the industry as it exists now has been the tremendous development in the chemistry of the coal-tar compounds, particularly those which are used in the manufacture of high explosives. In the past we have often been amazed at the subsidies and other means which the German government has used in developing the chemistry of the coal-tar products to the marvelous point that it has achieved in that country; and yet we know today that the basis of the development of that industry was not the capture of the world trade in coal-tar dyes, but to the end that, when Germany went to war, her armies should have back of them limitless possibilities for the manufacture of high explosives. It therefore now devolves upon us to develop to an equal point in this country that great branch of the chemical industry, so that the resources back of our Army shall also be practically unlimited in this direction.

I therefore think that perhaps it might be more to the point if I confined my remarks more or less to some of the special health problems which this necessary development of coal-tar chemistry brings to our attention.

I need hardly remind you that the chemical industry as a whole is especially characterized by exposure on the part of the workers to the effects of irritating fumes and poisonous dusts. If we take, for instance, the causes of fatal accidents which lie before us in the sheet published by the State Department of Labor and Industry, we will see that so far as poisons are concerned the chemical industry is well to the front, although the relative number of those engaged in it is considerably smaller than that of those engaged in other industries in the state. You will also see that the percentage of fatalities is third on the list, although numerically the industry cannot be entitled to rank in that particular proportion.

Considering, then, the particular problems presented by this industry, somewhat from the standpoint of the surgeon engaged in that industry, and especially the coal-tar side of it, I think that the general problems that will present themselves to us are, in the order of their relative importance, the occurrence of industrial poisoning, excessive absenteeism, and great labor turnover. I think that all employers in the chemical industry, and especially in the coal-tar industry, find that these are the special problems which cause them the most perplexity. This, of course, indicates that the industry itself possesses unfavorable features which bring these conditions about.

Of the various processes that are undertaken in the chemical industry, I should say that a large number of them can be divested of any particular hazard simply by ordinary precautions and by attention to the general principles of factory sanitation, such as the provision of abundant illumination, good washing facilities, sufficient ventilation, and the like. However, when we come to the manufacture of such substances as the nitro and amido derivatives of benzol and toluol and the like, we encounter hazards due to the intensely poisonous character of these compounds. It means, then, if we wish to maintain workers engaged in the manufacture of these in a state of health, that the type of supervision which is exercised must be more than usually careful and complete.

More than in any other industry, the industrial surgeon in the chemical industry should be regarded as the plant's sanitary officer. He should familiarize himself with the manifold hazards to the health that are bound up in the manufacture of these substances. He should be able to propose to the plant's management the best methods for rendering the carrying on of these processes innocuous to the workers engaged in them. He should make constant rounds in the plant, to determine that such conditions are being continuously maintained. He should have power to lay off or to change to other jobs not presenting such health hazards, workers who, in his judgment, are commencing to suffer from chronic poisoning. In addition to these duties as plant sanitary officer, he should carry on all the other functions in regard to the medical and surgical treatment and supervision of the workers that are demanded by the best practice among industrial surgeons.

Now all these coal-tar compounds, as you are well aware, may enter the system in three general ways: they may be absorbed through the skin; they may be inhaled as fumes into the lungs; or they may be swallowed. The first two channels of poisoning are, of course, the most important. Through the mouth, the toxic action of these substances is much less than when absorbed through the skin or inhaled, probably because they are not absorbed so extensively through the mucous membrane in the intestinal tract. I believe that it is well nigh impossible for any one to work around coal-tar compounds without absorbing a certain amount. Fortunately, however, so long as the amount absorbed is below the limit of individual susceptibility, the individual will continue to remain in good health. Poisoning happens only when the amount absorbed is above the capacity of the organism to convert it into harmless compounds. Therefore, the keynote of prophylaxis in preventing poisoning by coal-tar derivatives lies in preventing absorption through the skin.

Here the industrial surgeon immediately encounters a problem. Because of the great variation in individual susceptibility, many workers are less sensitive to these substances than are others. This constitutes a sort of matter of pride to them. If a man has a low rate absorption and is able successfully to withstand exposure that would soon bring other men into acute collapse and to the verge of death, he feels a certain amount of pride and endeavors to show off by handling with carelessness these poisonous compounds. Not only does he set a bad example, but the inevitable result is that some day he oversteps his limit of tolerance and is attacked by a case of severe poisoning. Therefore, the industrial physician has this problem, and that is to educate his men to have a wholesome respect for the poisonous qualities of these various compounds, so as to eliminate, so far as is possible, carelessness on their part.

One of his great functions in making such industries safe is that of an educator. He must teach his men that all poisonous coal-tar compounds must be kept from the skin; that the fumes that sometimes arise in the course of manufacture must not be inhaled; that the greatest personal cleanliness must be exercised on their part; that they must not leave the works without a full bath; that their overalls saturated with these compounds must be changed immediately; that the feet must be protected by wearing wooden-soled shoes; that alcohol, which predisposes greatly to poisoning, must be absolutely avoided by all workers in coal-tar compounds; that they must never come to work breakfastless; that they should always have a good breakfast, of which milk is an ingredient; and that they should never fail to report to the dispensary when they have any symptoms of poisoning, such as nausea, breathlessness, or when the color of the face is becoming somewhat cyanotic.

Having obtained this cooperation on the part of the workers by his efforts at education, the surgeon must see that the facilities the company furnishes in order to maintain the personnel in good health are of proper design and furnished in adequate amount. I believe that if men are hired to work in the manufacture of poisonous compounds, it is only fitting that the company should provide all proper and necessary facilities for rendering employment in such work safe. For that reason, I think that it is the duty of all chemical companies who engage in the manufacture of these compounds to see that the following facilities are furnished and maintained. The last word, "maintained," is of importance. Very often they begin by furnishing adequate facilities only to find them falling into desuetude, and the precautions not adopted, because care is not taken to maintain these facilities in good working condition. The following may be regarded as absolutely essential in any company engaged in the manufacture of these compounds:

1. A well-equipped dispensary and hospital, which should have a room in which there are at least two beds, so that treatment in bed may be afforded to those who are acutely poisoned.

2. There should be kept at least two tanks of oxygen, one of which should be kept full all the time.

3. There should be present an ample supply of weak acetic acid and water, in order to remove coal-tar compounds from the skin by washing.

4. There should also be present some stimulant, such as aromatic spirit of ammonia; and also chloroform water, for use where persons have been overcome by nitrous fumes.

5. There should be present in the plant men who have been trained in methods of artificial respiration, preferably the Schaefer method. While I do not, as a general rule, believe that some mechanical device for promoting respiration, such as the pulmotor or the lungmotor, can by any means take the place of manual methods of artificial respiration, still, in cases of gas poisoning, there are times when a mechanical device for respiration will render great service, for the reason that by means of this we can pump pure oxygen into the lungs when the individual is, perhaps, incapable of respiratory effort. As the oxygen tension in air at atmospheric pressure is only 20 per cent. of an atmosphere, while in pure oxygen, at like pressure, this tension is 100 per cent., the inhalation of pure oxygen is perhaps one of the best methods that we have at our disposal for reconverting methemoglobin back into oxyhemoglobin. I believe that such mechanical apparatus for the inhalation of pure

oxygen is sometimes capable of saving a life in these circumstances.

Besides facilities for undertaking the care of cases of poisoning both acute and chronic, the following should be provided by the company:

Where anilin is worked in, wooden-soled shoes should be furnished to prevent absorption through the skin from spills on the floor. Anilin passes readily through the skin. A dangerous dose may easily be absorbed through the soles of the feet unless these are protected by a substance that will not take up anilin readily.

There is no question in my mind that overalls should be furnished to the workers by the company. At a meeting of a Conference of Manufacturers in Washington we had some discussion as to who should furnish them. Everyone was agreed that they should be worn constantly and should be laundered and changed weekly, but there was considerable discussion as to who should pay for them. One manufacturer said that they furnished them to the workers at half price. Others said that the workers had to provide their own. So far as I know, however, none assumed the entire cost of providing them. One objection urged was that if they have the entire cost of providing the worker with overalls and then a worker should suddenly make up his mind to quit and take his overalls with him, this would result in a loss to the company. Also, it was said, the men were careless. If overalls were issued gratis, one man would apply for and obtain three or four suits in one week. Again, losses by theft were complained of. It seems to me that it is a simple matter to get around these difficulties by requiring a deposit from the worker when the overalls are issued. Then, if the man leaves without returning them, the company is secured against loss. If the overalls are stolen from him, the man must deposit again before receiving others. In that way, the allegation of theft as an excuse for missing overalls would be discouraged. When the overalls first issued become worn out the old suit must be surrendered to obtain a new one. When a workman leaves the employment of a company he surrenders his overalls and recovers his deposit.

Adequate washing facilities must be furnished. This includes not only hand-washing facilities, but also shower bath facilities. With regard to hand-washing facilities, my conviction is that all washing should be done in running water; that the ideal apparatus for this purpose is an ample trough with jets of water along the center line. Preferably, these jets should be equipped with fine spray nozzles. This diminishes the amount of water required and acts as a detergent. Warm water should also be supplied. It is unreasonable to expect men to wash as freely as they ought when only cold water is provided.

In addition to liberal hand-washing facilities, shower bath accommodations should be at hand. These shower baths should be located in the change house, so that the men may all take a shower before leaving work; but there should also be a shower bath in every workroom, especially where anilin is handled, so that when a large amount becomes spilled on the person of a worker, he may immediately remove the garments he is wearing and take a shower bath.

Besides washing facilities, there should be provided separate compartments for clothing, so that the street clothes will not come in contact with the work clothes.

The men should have a place to eat their lunch in, and eating in the workroom should be prohibited. We must remember, however, that if eating in workrooms is prohibited a comfortable place for eating luncheon must be furnished if the men do not go outside for their noon meal.

In addition to this, another precaution that should be taken by the company is rigid attention to the mechanical perfection of the apparatus which is used. All processes should, of course, be carried out under cover, so far as practicable; and where poisonous fumes and dust are given out into the air of workrooms, suitable exhaust devices, efficiently maintained, should be provided to counteract that danger so far as is possible.

Besides this, it goes without saying that men who are engaged in such dangerous processes should be physically examined, and also reexamined from time to time, as may be necessary. Alcoholics and young persons should not be permitted to engage in these processes. I believe that success in preventing coal-tar poisoning is not the result of any one particular measure. It consists in attention to a large number of small details; the saving of life and health will be proportionate to the care that has been spent in attending to these small matters.

I have only one more thing to mention, and then I will conclude. That is the question of hours of labor. I believe that, except in emergencies in works that are engaged in handling these poisonous products, the work should be conducted on the three-shift system. There is no doubt that the length of time of exposure is an important factor in the production of poisoning. Of course, I can readily understand that there are circumstances over which no control can be exercised, which require a lengthening of the work hours temporarily; but, as a general rule, eight hours a day is long enough for any one to work in handling dangerous coal-tar compounds. I believe that the introduction of such work hours where these products are handled will reduce the labor turnover and reduce the percentage of illness and consequent absenteeism. In addition to this, men engaged in particularly poisonous jobs should not be kept on these jobs all the time. They should be carefully watched for symptoms of poisoning, and rotated about once every two weeks.

Dr. Patterson: On all your desks you will find registration cards, and we shall be very appreciative of your courtesy if you will fill out these cards, which will be collected after the next paper, so that we may know who is present and send you these Proceedings, which will be printed in the Pennsylvania Medical Journal.

I am just in receipt of a telegram from Dr. John Price Jackson, who has entered the military service: "Extend my best wishes to all present at the Conference. This commonwealth is to be congratulated on having such a splendid collection of industrial surgeons, and may their efforts to conserve the lives and limbs of our toilers, who are the bone and sinew of our population, be followed by all possible success."

The symposium of papers that you have just heard is now open for general discussion. On account of the brevity of the time, the discussion must be limited. We want to hear from everyone and we want those who speak to come to the front and announce their names, so the stenographer may secure an accurate record. The papers are now open for discussion.

DISCUSSION

ON PAPERS OF DRS. MENGEL, JONES AND SCHERESCHEWSKY

Dr. Grover C. Weil, Pittsburgh Coal Co., Pittsburgh: Dr. Mengel's paper has been most impressive, and I feel that he has extended some of the former viewpoints. He has pointed out the view of conservation. If there is an opportunity in surgery for advancement in the treatment of infectious wounds, it is found, as I have found it, in the treatment of wounds received in mining injuries.

Dr. Mengel has spoken with regard to the low tuberculosis development as found in miners. I merely wish to remark that during an investigation by the University of Pittsburgh recently, his statement was corroborated. It showed a very low development of tuberculosis among miners, but that they are predisposed to lobar pneumonia.

Just another point that has struck me as a great advance, which Dr. Mengel has also mentioned: That point is service, service to the patient. Since Jan. 1, 1916, we have adopted a new policy in the treatment of traumatic wounds in the University Hospital, where I attend the men from the Pittsburgh Coal Company. We have found it the best plan to attend these men on admission to the hospital, and endeavor to do so as they come from the mines. We have found that this has been most profitable, and since the establishment of this method, we have on our records notes of about 115 cases during this period, the past year and a half. We have had seven compound fractures and one infected compound fracture, which we attribute to the patient's having been treated by a resident, with the application of gauze.

In a recent article published in a current magazine, concerning a hotel keeper, Mr. Boldt, who afterward rose to be the most famous hotel keeper in the world, it was stated that he attributed his success to the service he extended to his patrons; and the same thing can be applied to a treatment of traumatic injuries in the hospital. Service is the one thing which gives to you success; and when the surgeon himself, who is able and competent, and who is thoroughly familiar with the subject of immunity and the resistance of wounds offered to infection, appreciates that fact and comes in contact with the wounds of his patients when admitted to the hospital, he can overcome, in a great majority of instances, the question of infection. It is there where the most important feature lies, the treatment of first-aid.

We have come in contact with considerable gas bacillus infection. In this country, the greatest number of gas infections have resulted from mining injuries. I can remember, not many years ago, when almost all gas bacillus infections were fatal. During the last two years we have met them in the hospital with very little resulting fatality. I found that the most important feature was the ability to recognize the development of the gas bacillus early, and the cases were all saved. We have recently established the treatment of this condition by the application of sodium bicarbonate. Dr. Holmes, who has been in the American Ambulance Hospital at Paris, has studied that characteristic of the gas bacillus which produces intense acidosis; and the application of any alkali, preferably sodium bicarbonate, changes the environment of the bacillus and gives the patient the opportunity to defend himself. In the few cases that I have treated in this manner, I have obtained most wonderful results by the direct application into the wound of sodium bicarbonate, by means of enteroclysis, and, in a certain number of cases, intravenously. I wish to commend Dr. Mengel for the serious thought conveyed to all of us in his paper, because in that paper some of the most important facts have been set forth. He has not let himself become radical or overrun by the new methods being employed in surgery, and which will finally be put in their proper places.

Dr. Patterson: If there is no more discussion on the symposium, we will now proceed to the next paper which will be on the subject of the "Health Hazards of the Cigar Industry." About a year ago, the Industrial Board of this department received a series of communications indicating a belief on the part of a large number of people that the manufacture of cigars, a very large industry in our commonwealth, represented a very serious menace to those engaged in this work. A search of the literature showed, on the one hand, the belief of some investigators that the manufacture and handling of tobacco was followed by more or less serious consequences to those engaged in the operation; and, on the other hand, it was shown that the handling of tobacco is absolutely harmless, and that if you have the misfortune to have very poor health, instead of taking a rest cure, the best thing is to get a job in a cigar factory. With these two divergent views before the department, and with the department anxious to do what was fair and just to both employer and employee, we had the good fortune to secure the services of Dr. T. Grier Miller, of the Department of Occupational Diseases in the University of Pennsylvania Hospital; and of his colleague, Dr. Henry F. Smyth of the Laboratory of Hygiene of the University of Pennsylvania. They investigated the hazard to the workers in the cigar industry, and it will be our privilege to hear Dr. Miller present to us the conclusions that they have arrived at.

THE HEALTH HAZARDS OF CIGAR MANUFACTURING

WITH SUGGESTIONS FOR OBVIATING THEM

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AND

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It is well known that the cigar industry is rated low in the scale of healthful pursuits, and that medical men not infrequently advise their patients to abandon or avoid this trade. Such counsel sometimes brings about not only an economic hardship to the individual, but also a labor problem for the manufacturer. It is, therefore, important that the physician have a full appreciation of the hazards of the industry before offering such a recommendation, and at the same time that the employer be acquainted with the injurious conditions.

In a recent report,[1] in which the physical findings in 400 cigar workers were analyzed, the opinion was expressed that the common defects were not dependent on tobacco itself, but on faulty personal and factory hygiene; and in another communication[2] we have presented the actual hygienic conditions in forty-eight Philadelphia factories. It is now proposed to call attention to the manner in which certain of the observed practices are hazardous to health, and to outline a few simple measures for their amelioration.

While factory conditions are primarily considered in this presentation, it must be remembered, in the first place, that the bodily and mental reactions of the operatives during their work periods depend, to a certain extent, on their habits and surroundings during the more than two thirds of their time outside the factory limits. In the study of the 400 workers referred to records were made, in so far as was practicable, of these outside influences, which showed that they varied directly with the wages secured and inversely with the number of dependents. It was found that 60 per cent. of the workers were single, 46 per cent. of the married women were childless, and of those having children there was an average of only 1.9 of the latter; thus their dependencies were minimal. At the same time their earnings were fairly good, averaging $8 to $10 per week for strippers and banders and $10 to $18 for driers, packers and cigar makers. Consequently, in the majority of instances histories were secured of adequate living quarters, sufficient food and clothing, and some amusements. It must be confessed, however, that the food was often improperly selected and prepared, and that the amusements were largely of the indoor variety.

In the second place, the effects of factory conditions on the health of employees are influenced by the latter's mental attitude toward the work. This attitude in the case of cigar workers is universally one of contentment and cheerfulness, and it was not uncommon in our tours of investigation to walk into a department where the operatives were singing in chorus or loudly laughing and talking as they proceeded with their work. Speeding up was not the rule, though it was observed at times, most often in young girls, and it was induced apparently more by a high-strung nervous constitution than by a desire or necessity for increased wages.

Referring now to the more specific hygienic factors it is proper to speak first of the general order and cleanliness of the plants. In 46 factories we rated 16 from this viewpoint as good, 20 as fair, and 10 as poor or dirty. While most employers saw to it that the floors were swept at least daily, they were less careful about preventing an accumulation of dust and dirt upon the windows, shelves, unused tables and chairs, and other such places. In consequence, when by chance such places were disturbed great quantities of this material were scattered through the atmosphere. Furthermore, the dust which had accumulated upon the window glass often greatly diminished the lighting of the factories. As a rule, toilets were less well cared for than workrooms, and in some instances were found quite insanitary, although generally meeting the requirements of the law in regard to number.

With regard to ventilation, it may be deduced from our data that, with the exception of the cigar-making departments of some of the smaller factories, few rooms were found overcrowded.

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[1] Miller, T. Grier: A Sociological and Medical Study of Four Hundred Cigar Workers in Philadelphia, Am. Jour. Med. Sc., 1918, clv, 157.

[2] Smyth, H. F., and Miller, T. G.: A Hygienic Survey of Cigar Manufacturing in Philadelphia, Med. and Surg., 1917, i, 698.

and in the seven larger factories, in which our more exact studies were made, there was an average of about 1100 cubic feet of air space per person in the packing rooms, 2700 in the stripping and in the drying rooms, 4200 in the banding rooms, and 6500 in the casing rooms. In the cigar-making rooms of the smaller factories, however, the average was slightly lower, 640 cubic feet. Even this is acceptable where there is sufficient air movement, but unfortunately the latter condition did not often prevail. In explanation, employers and workers alike claim that drafts are injurious, and in cold weather even the cracks in the windows are often stuffed with paper in order to prevent any fresh air entering. With the exception of the machine cigar-making rooms, artificial means of producing air movement were seldom employed. In these rooms the suction system which is designed solely to hold down the wrapper while it is being cut, has the added, though unintended, advantage of greatly increasing the air circulation. In one department, where two hundred girls were at work, it was calculated that this system removed over 1800 cubic feet of air per girl each hour, this with the usual accidental sources probably supplying a sufficient air change. In the other departments there were no substitutes for this system, as was frequently evidenced by a distinct sensation of stuffiness.

Closely related with this matter of air movement is that of temperature and humidity. Hayhurst[3] states that 68 F. is the ideal temperature, and 60 to 70 per cent. the ideal relative humidity for workrooms, while Kober[4] and also Thompson[5] state that a relative humidity of 55 to 65 per cent. is most healthful. In our averages we found the temperatures well above 70 F., and the humidities between 39 and 56 per cent. for each department of the seven cigar factories, except in the drying department, where both were normal. This low relative humidity, by increasing evaporation is, no doubt, a factor in the production of irritation of the eyes and upper respiratory passages, such as was found in the physical examinations reported from our clinic. Furthermore, these factors offer an explanation for the workers' objection to drafts, the latter often producing sudden changes in both temperature and moisture.

Another hygienic consideration is that of illumination. It is difficult to describe the efficiency of lighting in buildings, and it has been necessary in our studies to depend solely upon our judgment, classifying it as good, fair, or poor for each plant as a whole. In the 48 factories we noted as good just one half, as fair 18, and as poor 6, irrespective of whether the light was natural, electric, gas, or some combination of these. Electric lights were most generally used, and in the cigar-making rooms they were usually placed over the central line of each row of tables immediately in front of or slightly above the workers' eyes. Such placing of lights is quite as much a menace to health and efficiency as is insufficient lighting.

The question of dust in the industry particularly interested us, and by means of the Palmer[6] apparatus dust samples were secured from nineteen departments of seven factories, and also we have secured similar samples from various cement, steel-grinding, pottery, flint, asbestos, plush and carpet, silk and felt-hatting plants. A study of our data derived from all these samples gave the following results in reference to the cigar factories:

1. The intensity of the dustiness differed greatly in the various departments, but it was roughly of similar degree for like rooms of the seven plants, the banding and packing rooms being least dusty and the machine cigar-making and stock rooms most so.

2. The number of dust particles ranged from 25,000 to 235,000 per cubic feet, and the weight from 5 to 14 milligrams per cubic foot, these figures being slightly less than those secured for outdoor city air and far less than was found in any other industry, except silk manufacturing. This is to be explained partly by the fact that tobacco in these factories is kept moist. In spite of the statement of Baker[7] that "in the manufacture of cigars there are few moist leaves used," we found the driest tobacco we could obtain to contain 15 per cent. of moisture, and to give rise to very little dust upon agitation.

3. More than half of the particles ranged between 1 and 40 microns in diameter, while the others were 1 micron or less; whereas, in every other industry studied the majority of the particles were of the latter size. It is stated in some textbooks that the most dangerous particles are those between 5 and 10 microns, but this does not seem proved, and we should

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[3] Hayhurst, E. R.: Industrial Health Hazards and Occupational Diseases in Ohio, 1915, p. 24.

[4] Kober and Hanson: Diseases of Occupation and Vocational Hygiene, 1916, p. 436.

[5] Thompson: The Occupational Diseases, 1914, p. 46.

[6] Palmer, Coleman, and Ward: A Study of Methods of Determining Air Dustiness, Am. Jour. Pub. Health, 1916, vi, 1094.

[7] Baker, Valentine C.: Dusty Occupations, Jour. Am. Med. Assn., 1916, lxvi, 1453.

naturally expect the smallest ones to gain access most readily to the lungs.

4. The inorganic content of this dust averaged 44 per cent., and this is less than for any other industry in our series, except felt-hatting.

5. The nicotin content, which was determined on a number of samples, averaged 0.79 per cent., this being in close agreement with percentage determinations by other investigators.[8]

On the basis of these data it is calculated that a cigar worker in a day of 9¾ hours inhales air which upon its entrance into the mouth or nose contains 12.4 milligrams of dust, 5.4 milligrams of which is inorganic, and 0.095 milligrams of which is nicotin. Of this total amount about 40 per cent., according to Lehmann,[9] reaches the lungs, the remainder being caught in the upper air passages or mouth, and finally in large part reaching the stomach.

Although the recent study from our clinic did not show conclusively any pulmonary effect from this dust, still it seemed desirable to have more exact evidence, and so we have included some of these workers in a larger study upon the effects on the chest of dust inhalation, including as its most important feature roentgenoscopic and stereoroentgenographic examinations, which we have been privileged to make in collaboration with Drs. H. K. Pancoast and H. R. M. Landis. By their courtesy we are presenting the accompanying table which shows various clinical data and Dr. Pancoast's roentgenographic findings in a small series of cigar workers.

Out of a total of twelve unselected workers, whose ages ranged from 14 to 55 years, and whose time in the industry varied from six months to forty years, there were seven in whom the physical signs suggested the possibility of slight and inactive apical infiltration, and in all of these, but one, the roentgenograms showed some prominence of the linear markings from the hilus to the suspected apex. From the roentgenograms alone Dr. Pancoast considered only four as suspicious of a tuberculous lesion, one of these being an individual

COMPARISON OF THE CLINICAL AND THE ROENTGENOGRAPHIC PULMONARY FINDINGS IN 12 CIGAR WORKERS*

			Clinical Data				Roentgenographic Findings					
No.	Age	Sex	Years in the Industry	Medical History	Physical Findings in Chest	Clinical Diagnoses	Hilus Shadows	Linear Markings	Deposits in Lungs	Diffuse Fibrosis	Diaphragms	Diagnosis
734	14	F.	½	Negative.......	Per. and br. + at rt. ap.	Infiltration at rt. ap.	Normal..	+ to rt. base and apices	0	0	Restriction of right	Suspicious tuberculous right apex
775	18	F.	1	Negative.......	Br. sli. + at rt. ap.	Normal	Normal..	+ to rt. base and left apex	0	0	0	?
769	18	M.	1	Negative.......	Per. and br. + at rt. ap.	Infiltration at rt. ap.	Normal..	Sli. + to both apices	0	0	0	Suspicious tuberculous right apex
839	20	F.	3	Negative.......	Flattening, per. and br. + at rt. ap.	Infiltration at rt. apex	Sli. + on right	+ to right and ++ to left apex	0	0	Restriction of both	None
758	19	F.	5	Negative.......	Flattening, per. and br. + at rt. ap.; cogwheel breathing	Infiltration at rt. apex	Sli. + on left	+ to rt. base and apex	0	0	Restriction of right; jerky movement	None
841	20	F.	6	Menorrhagia; fainting attacks	Mitral systolic murmur	Mitral regurgitation	Sli. + ...	+ to apices...	0	0	0	None
650	36	M.	16	Asthmatic attacks	Negative.......	Bronchial asthma	Sli. + ...	+ to both bases, inner aspect	0	0	Angulation of right	None
913	34	M.	22	Negative.......	Granular br. at l. ap.; br. + at rt. ap.	Infiltration at r. base and l. apex	Sli. + ...	+ to lt. apex and bases	0	0	Angulation....	None
909	44	M.	29	Negative.......	Cardiac extrasystoles	Cardiac arrhythmia	Sli. + ...	Normal.......	0	0	Angulation of right	Suspicious tuberculous right
669	52	M.	38	Cardiac pain, dyspnea and edema	Heart wide and sounds weak; emphysema	Ch. myocarditis; emphysema	++	++ to bases and apices	Small discrete spots	0	Angulation of right	Slight pneumoconiosis
912	53	M.	40	Cough; diagnosed tuberculous 30 years ago	Poor expansion and Per. + both sides, esp. rt. apex	Ch. myocarditis; emphysema; infiltration at rt. apex	++	++ to bases and apices	0	Both apices probably	Restriction...	Suspicious tuberculous right apex; thickened pleura at left apex
879	55	M.	40	Negative.......	Signs at both ap., esp. rt.	Infiltration at rt. apex	Sli. + ...	++ to bases	0	0	0	Healed tuberculous lesion at each apex

* Explanation of abbreviations: br. = breath sounds; per. = percussion; rt. = right; lt. = left; ap. = apex; sli. = slightly.

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[8] Heucke, Schedban, and Hesse: Quoted by Baker (Reference 7).

[9] Lehmann, Saito, and Gfrorer: Arch. f. Hyg., 1911-1912, 75-152.

in whom no physical signs had been elicited. In one other instance the roentgen plates indicated a certain tuberculous lesion, this being an old healed one. No generalized lung mottling or diffuse fibrosis, such as has been found in workers in cement, pottery, and steel dust, could be demonstrated in any of these individuals, except some small discreet spots in one who was suffering from severe chronic myocarditis and emphysema, and some localized fibrosis in the apices of another who had also some pleural thickening. From this study of a small series, therefore, it would seem justifiable to conclude that cigar workers do not develop, as a result of dust inhalation, any significant pulmonary lesions which can be demonstrated roentgenographically, but that such studies do suggest a somewhat frequent tuberculous infection.

Finally, in reference to dust, evidence of a toxic effect from the absorption of its nicotin content, which according to Cushny is the only constituent of tobacco of toxicologic interest, was searched for, but in no instance was it discovered. Dixon and Lee[10] have shown experimentally that a certain small degree of tolerance can be developed to this alkaloid, and it would seem that this phenomenon together with the extremely small daily dosage, less than one tenth the accepted toxic dose, and the known fact that it is secreted by the kidney soon after entering the blood,[11] probably accounts for the absence of poisoning symptoms, except in an occasional new worker. At the same time, it would seem desirable to reduce even this small daily intake of nicotin.

The last and most notable hygienic fault observed throughout the cigar industry was the practice of bunch-biting and wrapper-licking. In only a few plants was this prohibited, although in most of them it was discouraged. The bunch maker bites out with the teeth the protruding ends of the filler after the binder has been applied and licks the final end of the latter to make it hold. Also the roller very frequently uses saliva in finishing off the head or mouth end of the cigar.

These practices have several objectionable features. (1) They provide a means of transmitting micro-organisms from the mouths of the workers to those of the consumers. It is stated that tobacco kills micro-organisms, but we have been able to culture them from tobacco dust. and there is no good reason to suppose that tuberculosis and syphilis might not be transmitted in this way, as well as the organisms which cause the more acute but less serious infections. (2) It is a dirty habit. The operative's mouth becomes filled with tobacco, looks uncleanly, and oral hygiene is discouraged. (3) It has an injurious effect upon the teeth, the gritty material getting on them and slowly wearing down the biting surfaces. Among the four hundred workers 27½ per cent. showed such wearing, as did indeed 41 per cent. of the female cigar makers. In many instances the enamel was worn entirely through and it was not infrequent to see all the teeth worn half down to the gum margin. Such a condition naturally predisposes to caries, root abscesses, and their sequelæ.

It will readily be appreciated that all these hazards are largely accidental to the industry and remediable. We venture to offer the following suggestions for overcoming them:

1. Improved ventilation which would insure 3,000 cu. ft. of fresh air for each person per hour. This could be secured by such simple measures as the use of muslin cloth windows, by electric fans, or by the more general use of some such suction system as already happens to exist in connection with the cigar-making machines. To obtain a *per capita* air space of 500 cubic feet, or even ideally 1,000 cubic feet, would necessitate larger quarters in some of the smaller plants, but in most places a simple rearrangement of the workers would suffice.

2. Reduction in the temperature and increase in the relative humidity. This could be accomplished by the installation and operation of automatic humidifiers checking these up by frequent and regular hygrometer readings.

3. Better lighting. This could be secured by the use of larger bulbs of the diffusing type and by keeping the windows cleaner. In some instances the window spacing should be enlarged. Electric lights should be elevated well above the head in order to avoid the glare.

4. Diminution of dustiness. This factor cannot be entirely eliminated, but may be reduced by improved general cleanliness, by increased humidity, by the establishment of a suction system in all the rooms, and by the careful avoidance of dry sweeping, substituting therefor either vacuum cleaning or wet sweeping and subsequent mopping with a wet cloth. In those departments where dust is excessive, especially the drying and stock rooms, respirators should be worn.

5. The elimination of the practice of putting tobacco into the mouth in any process of cigar manufacture.

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[10] Dixon, W. E., and Lee, W. E.: Quart. Jour. Exp. Phys., 1912, v, 373.

[11] Greene, C W.: Handbook of Pharmacology, 1914, 144.

CONCLUSIONS

1. The striking hygienic faults of the cigar trade, as suggested by a study of the industry in Philadelphia, are a lack of general cleanliness, defective air movement, excessive temperature and relative dryness, unnecessary dustiness, and inefficient lighting in the work rooms, and especially the habit of bunch-biting and wrapper-licking.

2. All these conditions are remediable with little or no expense to the employers, and in every instance to their eventual advantage as well as that of the workers.

3. The amelioration of these health hazards will elevate the standing of the cigar industry, will help to solve its labor problem, and will, we believe, convince the medical profession and the public of the comparative harmlessness of tobacco to the workers therein.

Dr. Patterson: The next subject is closely allied to that which Dr. Miller has so very ably presented, so I think we might combine them. Sir Thomas Oliver has wisely said that the curse of our industrial life is dust and fume, and how far this is true, I am sure that we shall learn when the results of the investigation conducted by Dr. Henry F. Smyth and Dr. T. Grier Miller of Philadelphia are given. It gives me pleasure to introduce to you Dr. Smyth, who will present the joint paper entitled "Industrial Dusts."

A PRELIMINARY REPORT ON DUST STUDIES IN VARIOUS INDUSTRIES.*

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AND
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The work just reported by Dr. Miller in the preceding paper included the collection and examination of dust samples from cigar factories. Following that investigation the clinic for diseases of occupation of the hospital of the University of Pennsylvania has been engaged in a study of various industries with particular reference to the dust hazard, and the effects of various kinds of dust on the workers therein. In this investigation surveys were made of the different factories, dust samples collected and medical histories taken and physical examinations and roentgenographic studies made of the chests of the men who had been employed for a number of years in specific dust-generating occupations. In the latter features of the work Dr. H. R. M. Landis of the Phipps Institute and Dr. H. K. Pancoast, roentgenologist to the University Hospital, cooperated. Work in the textile industries was much facilitated by the cooperation of the United States Public Health Service under the direction of Dr. J. W. Schereschewsky.

It is our purpose in this presentation to direct attention mainly to a consideration of the various kinds of dust encountered. Dust production in industry varies from moment to moment and distribution is dependent on varying air currents. Therefore, for a study of the effects of dust on workers, it is necessary not so much to note maximum and minimum conditions as averages over appreciable periods of time of sufficient duration to embrace normal pauses and variations in velocity and direction of air currents. From such observations reasonably reliable calculations may be made as to the amount of dust to which a worker may be exposed in a day's work at a given process.

With the introduction of the Palmer apparatus, which has been adopted as a standard by the American Public Health Association, we have a nearer approach than before to ideal sampling for this purpose. It is a portable, not unwieldy, machine, simple in operation, which can be set up so as to collect dust from the air level from which the worker inhales dust while at work, and which can be run continuously for definite periods limited only by the dustiness of the atmosphere. The optimum rate of operation, 5 cubic feet per minute, allows of 200 cubic feet being washed in forty minutes, and larger samples can be taken if desired. The dust is collected in water, washed into a clean bottle and diluted up to, say, 100 c.c. Here you have a sufficiently large sample to make several tests, and if desired, to preserve a portion for a permanent record. The total solids can be weighed, the percentage of mineral matter determined, and chemical tests for poisonous substances made. Also the number of dust particles per cubic foot of air can be determined with the relative proportions of particles of different sizes in this total, and the form of the particles.

The work here reviewed was done with this apparatus run, usually at the 5 cubic foot per minute rate, for from five to forty minutes, depending on the dustiness of the atmosphere. Thus from 25 to 200 cubic feet of air were washed. The entire amount of dust from one half the sample was weighed after evaporation of the distilled and filtered water used for the collection. Results were recorded as total solids in 100 cubic feet of air, in the longer sampling periods requiring no multiplication factor to introduce a source of error. Counts of particles were made and calculated per cubic foot of air, and for differential counts particles were grouped in four average sizes, 0.04, 0.01, 0.004 and 0.001 mm. Palmer's tests show that practically all particles of these sizes are retained in the apparatus, and the smaller particles that may pass through probably have no hygienic significance.

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* From the Clinic of Diseases of Occupation of the University Hospital and the Laboratory of Hygiene of the University of Pennsylvania.

In all, seventy tests have been made in this series, sixty-five in industrial establishments, and five, three in private rooms and two outdoors, to furnish some idea of standard conditions for comparisons. The outdoor standard is an average of city and country air and the indoor standard an average of air in a country residence and two city laboratories. Tests were made in industries where the dust may be classed as mineral, in others as vegetable, and still others as animal in origin. Five industries generated chiefly mineral dusts, two purely animal, one purely vegetable and one mixed animal and vegetable dusts. In the mineral dusts twelve different factories in five industries were visited and twenty-eight tests made. Five tests were made in two industries generating dust of animal origin, nineteen tests in six cigar factories to represent vegetable dust and thirteen tests in a large blanket, plush, and carpet factory generating a mixed dust largely animal in origin.

In counting dust, fibers much longer than the diameter of the first group (0.04 mm.) were excluded and also particles smaller than group four (0.001 mm.), as these are almost impossible to count accurately. The exclusion of fibers makes an apparent discrepancy in the relation of number of particles to weight of solids when comparing organic with mineral dusts, but this is unavoidable. Calculations were made as to the amount of dust inhaled in a working day in each industrial process. These were based on the amount found in 100 cubic feet of air and on the average of 17 to 18 respirations per minute with 30 cubic inches of tidal air at each respiration, giving about 18 cubic feet per hour. Lehmann, employing white lead experimentally, found that 35 to 42 per cent. of dust that entered the nares in nasal respiration actually reached the bronchioles and remained in the lungs, the balance either being swallowed with postnasal mucus or expectorated, or coughed, sneezed, or blown from the nares. Calculations as to the amount of dust reaching the lungs were based on a minimum of 33⅓ per cent., slightly under Lehmann's figures so as to be on the safe side. In workers with hypertrophic rhinitis, septal spurs or deflections, or nasal or postnasal obstruction of any kind, the amount of dust reaching the lungs would be much greater, as Lehmann found that in mouth breathing about 80 per cent. of inhaled dust reached the lungs.

In summarizing the tests, industries were grouped as generating organic or inorganic dusts. Under general mixed dusts were included a summary of the two outdoor and three indoor tests which were made for the purpose of giving some standard of comparison. Outdoor air, country and city averaged, showed 34,000 particles per cubic foot with 3 per cent. in the largest size and 65 per cent. in the smallest, which is about the average size of micrococci. There were only 6.9 mg. of dust in a hundred cubic feet of this air. Indoor air in these three tests averaged nearly three times as many particles, 99,600 per cubic foot, with 1 per cent. in the largest and 71 per cent. in the smallest group, but the total solids per 100 cubic feet were less than twice as much, 11.4 mg. On comparing these standards with the industrial tests it appeared that the average of indoor and outdoor air was below that of any industry in total dust particles per cubic foot and only silk weaving gave a smaller weight of solids per 100 cubic feet. In fact, conditions in the silk factory were better than the average of the indoor tests in both weight of solids and number of particles in the air, and the relative number of different sized particles more nearly approached those in the standards, with 10 per cent. in the two larger-sized groups and 76 per cent. in the smallest as against 9 and 69 per cent., respectively, in the standard average. No other industry approached this in relative abundance of micron-sized dust and only felt-hat making showed as small a percentage of 10-micron and 40-micron sizes. In general it may be stated that while the proportion of large and small particles is about the same in mineral and organic dust, yet the former contains many more particles per cubic foot.

Tests in cement clinker grinding, asbestos carding rooms, and flint mills, and pottery factories showed a great reduction in amount of dust in the air brought about by installation of efficient suction dust removal at the point of production. This also resulted in a marked decrease in the percentage of smallest sized particles and these we feel are the ones most likely to reach the lungs of the workers and cause fibrosis.

No constant relation was seen between weight of solids and number of particles, the weight being dependent on the specific gravity of the dust and the relative numbers of large and small particles in the total count.

Cement dusts ranged from 1¼ million to over 13½ million particles per cubic foot, in two instances there being almost 0.5 gram in 100 cubic feet, and no other industry approached these totals. Next to cement, the flint mills showed the most dust, and flint dust ranks among the sharpest and most irritating of mineral dusts. One flint mill was equipped with exhaust ventilation but owing to carelessness it was "not working" at the time.

Dust in a steel ball grinding factory gave a very high total count of particles with a high percentage of smaller sizes in the dry grinding room and this was the only test showing 100 per cent. of mineral matter in the dust. There were over a million particles per cubic foot in this test, while the air of an adjoining room where the final grinding was done in a heavy oil contained only 90,000. This is a striking demonstration of the value of wet processes in dust prevention.

In the tests in mineral dust the best conditions were found in the oil grinding room of the ball-bearing factory, and the next in the best hooded asbestos carding room, but in general the pottery industry was least dusty. Some of the potters examined by Dr. Pancoast showed very marked fibrosis in the lungs but these were men who had been working many years in the industry, starting when no attention was paid to minimizing or removing dust. The worst conditions were in the cement, and the next in the steel ball grinding room, with the unprotected asbestos crushing and screening room almost as bad.

By far the worst conditions among organic dusts were found in the carpet mills, the wool breaking room ranking next to the cement factory for dustiness. This room and the rag-packing room in the same factory were objectionable not only for the total amount of dust but for the possibly infectious nature of the material. The man feeding the wool breaker works continuously in a cloud of raw wool dust and dirt thrown directly in his face by the machine and the rag packer operative not only handles filthy woolen rags of all descriptions but frequently goes into an enclosure into which the shredded material is blown and carries it out by the armful, leaving the door open so that the entire room is full of floating dust. He is exposed to much more dust than the test would show, as that was taken near where he stood to feed the machine and did not sample the air he breathed when he carried out the shredded material. The wool breaker operative inhaled over 400,000 particles in each cubic foot and over 0.7 grams of dust per day. Plush making gave tests higher than any in the carpet mill except the wool breaking. Proper ventilation in many rooms was interfered with by excessive crowding of machinery. Much better conditions were shown in two tests in the blanket mill. The mill was kept especially clean as it was doing government work, and in addition to blankets was making airplane wing cloth. Also both kinds of cloth were woven with steamed thread used while still wet, showing again the value of wet processes. Plush mill tests averaged over 150,000 particles per cubic foot and almost 50 mg. of dust inhaled per day, and blanket mill tests averaged 72,000 particles and 38.9 mg.

Tests in the hat factory were made only in the fur cutting and blowing and in the hat forming rooms and comparatively little dust was found, the highest count with greatest percentage of small particles being in the air from the cutting room. Were it not for the dried "carrot" (acid nitrate of mercury) on the fur, conditions would not be objectionable here, but unfortunately many of the smallest particles, which form 70 per cent. of the total, are probably mercurial and therefore toxic in nature. The humidity of the forming room and in the blowing machines keeps down dust in these rooms.

Dr. Miller has already discussed the results in tobacco dust tests, in the previous paper, and it will merely be noted here that while in general little dust was found, yet the test in one factory showed a weight of total solids greater than any test in the hat factory or even in the potteries. The count here was not so high as the relatively large number of large sized particles accounted for the weight.

Reviewing the tests in organic dusts it was noted that no so-called organic dust is free from mineral matter, and in some instances considerably more than half the dust was inorganic. In estimating the effects of organic dusts on the lungs this fact must always be borne in mind. While in these tests the organic dusts were generally less than the mineral, yet there were marked exceptions as noted above, and all textile mill tests except silk averaged higher than did pottery.

In many of the tests relative humidity determinations were made and these showed clearly the effects of increased humidity in lessening the number of larger sized particles and in decreasing the total number of particles per cubic foot. Naturally this latter effect can be seen only when effects of increasing humidity in similar industries are studied. In the forty instances where relative humidity was tested only one room was found with humidity over 72 per cent., Haldane's maximum for comfort. Some rooms apparently excessively humid were so regarded merely because of lack of air motion. With increased ventilation, due to suction dust removal at machines, humidity might often be increased with advantage both to comfort and efficiency.

Most interesting and instructive results were obtained by a study of the amount of dust inhaled per diem by the workers in each department tested. Estimating an average working year of three hundred days and figuring on one third of the inhaled dust being retained in the lungs the weights of dusts so retained were calculated. In the dustiest room in one cement plant a man would retain in his chest over 100 grams per year and it would take him less than five years to add one pound to his weight by this method. The average of all the cement tests would give less than eleven years to accumulate a pound. At the same rate the worker feeding the wool breaker would get his pound in seven years and the average carpet mill employee in thirty-five years. The ball-bearing grinder would work thirty-one years for his pound, while in the dustiest asbestos room over forty-five years would be needed to produce the same result. No other industry tested would cause this result within the average working life of an employee and over forty-eight full years would be needed to accumulate one pound in the dustiest of the two laboratories.

Figuring on the weight of dust inhaled, as well as on the total number of particles per cubic foot, cement and silk form the two extremes though the order of dustiness varied somewhat when tabulating by the two methods.

These investigations show the actual amount of dust inhaled both by count and by weight, the effect of adequate exhaust ventilation at the points of dust production in reducing total dust and especially the percentage of smaller, more dangerous particles, the effect of increasing humidity in lessening total dust, and the value of wet processes where practicable.

A study of the findings demonstrated clearly that for a full understanding of the dust problem we must not only study the weight of the dust but also the number of particles of different sizes in the total and consider the shape and composition of these particles.

The findings of Drs. Landis and Pancoast as to the chest lesions produced in workers in dusts have been or soon will be published elsewhere as will a more detailed consideration of the data on which this paper is based.

Dr. Patterson: I am sure that it needs no words of mine to emphasize this valuable contribution by Dr. Smyth and Dr. Miller. The subject of dust is now open for discussion. If there is no discussion, it gives me pleasure, before adjournment, to state that with your permission at this meeting we intend to organize the Pennsylvania Local No. 1 of the American Association of Industrial Physicians and Surgeons. During recent years, those interested in industrial medicine and surgery have had the opportunity of coming together in the Industrial Hygiene Section of the American Public Health Association, and the Preventive Medicine Section of the American Medical Association, as well as in the Health Service Section of the National Safety Council. Several years ago, a number of those who were interested in industrial medicine felt that these various bodies, good as they were in their way, did not represent quite what they wanted. They wished the opportunity to have the industrial physicians and surgeons of this country come together at stated intervals, in order to discuss among themselves their individual problems. With this thought in mind, a committee of men, self-constituted, came together. As the result of their deliberations, there was formed, on June 12, 1917, a chartered organization, which took the name of the American Association of Industrial Physicians and Surgeons. Its first meeting was held in the city of Detroit, last year; and the second meeting was held this year, in New York City. Both meetings were an unqualified success. The association was extremely fortunate in having as its first president that dynamic force in industrial medicine, Dr. Schereschewsky, and at the last meeting of the Board of Directors we received the permission to form, in the various states of the Union, locals or branches of this parent organization, so that there might be within the various states, the opportunity for those working in industrial medicine to come together. Approximately a year ago, as you remember, we had here in this building, the first meeting of Industrial Surgeons of this and neighboring commonwealths; and I was able to persuade the Board of Directors of the parent association that it was only fitting and proper that, as Pennsylvania had been the first state to come together in this way, we should be known as "Chapter No. 1." I, therefore, submit to you, for your consideration and opinion, the question as to whether or not it is wise for us to form this branch of the parent organization.

Personally, I feel that it is a very wise thing for us to do. We meet together, as we do, three or four times a year, simply as an informal gathering. The question is before you for discussion. I shall be glad to hear from anyone who has an opinion to express. I feel that we should organize; that there never was a time in the history of medicine when this organization was more needed, for we require that strength which comes from organization. I shall be glad to hear from anyone. I want you to express your opinion, ladies, as well as gentlemen, as to whether we should organize a branch of the American Association of Industrial Physicians and Surgeons.

Dr. A. W. Colcord, Carnegie Steel Co., Clairton: I had the pleasure of attending the last meeting of the Association of Industrial Physicians and Surgeons. For a first meeting, it was a good one. The objection has been raised by some whom I have heard talking of this, that they already belong to too many organizations, and do not get time to go to them. I want to answer that objection in this way: That I do not believe it will increase the number of meetings to go to. We all enjoy these Harrisburg meetings, two or three a year. The proposition is this: That the meeting we now are attending will be merged into this State Chapter of the American Association. It will not increase the number of organizations that we belong to, or the number of meetings we go to; but it clearly makes us a part of the national association, and puts us in touch with them, increasing the efficiency of our meetings. I am heartily in favor of forming the chapter.

Dr. F. F. Moore, Rochester and Pittsburgh Coal and Iron Co., Lucernemines: What are you going to do with those who already belong to this association?

Dr. Patterson: We will take them right in. You just become members automatically. The question is whether we shall have a chapter of this organization in this state.

Dr. C. H. Pike, Harrison's, Inc., Philadelphia: What are the dues?

Dr. Patterson: There are no dues connected with a chapter at all. The dues are $2 a year to the national organization. There are no local dues. Two dollars will not break anyone. We have no need of money in the local chapter, and we have no rent to pay. Such correspondence as is necessary, I think we can attend to here.

Dr. C. A. Lauffer, Westinghouse Electric and Manufacturing Co., Wilkinsburg: Who is the secretary now? Dr. Mock is gone.

Dr. Patterson: Dr. Mock is still the secretary, and Miss Gunther, his assistant, is actually doing the work.

Perhaps the simplest thing would be to take a vote. All those in favor of having Chapter No. 1 of the American Association of Industrial Physicians and Surgeons say "Aye"; contrary minded, "No." It is unanimously carried. The offices to be filled in this association are, chairman, vice chairman and secretary. The Chair will appoint a committee, consisting of Dr. J. W. Schereschewsky, chairman; Dr. C. A. Lauffer, Westinghouse Electric and Mfg. Co., East Pittsburgh; Dr. J. B. Hileman, Pennsylvania Railroad Co., Harrisburg; Dr. A. C. Marshall, Powers-Weightman, Rosengarten Co., Philadelphia; Dr. S. P. Mengel, Lehigh Valley Coal Co., Wilkes-Barre, to make nominations for these offices and to report at the afternoon meeting.

It is with deep regret that I have to announce the first death that has come to my knowledge of an industrial surgeon in the performance of his duty, since the passage of the Compensation Act. Dr. H. H. Bunce, Jr., employed by the Pittsburgh Steel Company, while performing his duty in the dispensary of the plant, was called to treat an infected wound. He proceeded to do so, properly safeguarded with rubber gloves. Unfortunately, in making an incision to secure proper drainage, the knife slipped, and he sustained a punctured wound of his finger, and I am sorry to announce that on October 28, he died as a result of a virulent and unconquerable streptococcic infection. It seems to me that with the industrial surgeons of our state and neighboring commonwealths gathered together, it is but fitting that we express to his family our sympathy in the catastrophe that has come to them. I will, therefore, appoint as a committee to draft a suitable telegram and send to the family of Dr. Bunce, Jr., the following: Dr. Otto P. Geier, Cincinnati Milling Machine Company, Cincinnati, chairman; Major Philip S. Doane, U. S. Army Medical Reserve Corps; Major Harry E. Mock, U. S. Army Medical Reserve Corps; Dr. George M. Price, director Joint Board of Sanitary Control, New York City; and Dr. Walter H. Blakeslee, medical inspector, Department of Labor and Industry, Philadelphia.

We will now adjourn and return again at 2 o'clock to go on with our program.

Adjourned at 12:30.

The following telegram was sent by the Committee of Sympathy:

Harrisburg, Pa., Nov. 20, 1917.

Mrs. H. E. Bunce, Jr.,
1527 Beechview Ave., Pittsburgh.

The Pennsylvania branch of the American Association of Industrial Physicians and Surgeons assembled at Harrisburg today, desire to express to you their deepest sympathy in the loss sustained by the death of your husband.

We believe that the Industrial Physician in protecting the lives of the workers in war is as much engaged in serving his country as if he were attached to the Medical Corps of the Army.

Dr. Bunce's death, therefore, has removed a constructive force for good and one that can illy be spared at this time.

Committee,
Dr. Otto P. Geier,
Major Philip S. Doane,
Major Harry E. Mock,
Dr. George M. Price,
Dr. Walter H. Blakeslee.

AFTERNOON SESSION

The meeting was called to order at 2:25 p. m., by the Chairman, Dr. Francis D. Patterson.

Dr. Patterson: Now, gentlemen, if you will come forward and take seats, we will begin our afternoon session.

There is no doubt that one of the most important things that is going to come before us in the not distant future is the placing in their proper position with the ranks of industry the soldiers, sailors, and marines who have the misfortune to be injured or otherwise incapacitated through their service in the war. It is with pardonable pride that I state that this Commonwealth has been, we believe, in advance of any other state in the Union in its efforts to place in the ranks of productive industry those who have the misfortune to be handicapped by either accident or disease. The plans that our government is making for the restoration to productive labor of the sick or injured of the United States forces are of paramount interest to us all, so it is my pleasure to introduce to you Major Harry E. Mock of the United States Army Medical Reserve Corps, who will speak to us on the subject of the Reconstruction of the Wounded Soldiers.

RECONSTRUCTION AND REHABILITATION OF THE DISABLED SOLDIER

MAJOR HARRY E. MOCK, M. R. C., U. S. A.
WASHINGTON, D. C.

Reconstruction and reeducation of the disabled soldier is considered an absolutely new product of this war. But many doctors have been practicing reconstruction from time immemorial, and of late years many of us, fortunate enough to be working in that great specialty of Industrial Medicine and Surgery, have been practicing both reconstruction and reeducation or, better known by a broader term, rehabilitation of the disabled employee.

But the profession and society at large have been woefully negligent toward the handicapped individuals of civil life. It took the war to awaken us to this great responsibility, the same as it has to so many other responsibilities.

By reconstruction we mean the adopting of the very best medical or surgical procedures possible in order to obtain the greatest functional restoration in a diseased or injured organ or member of the body. By rehabilitation we mean the mental and physical training of the disabled individual so that he can again be established as a useful member of society, and further supervising him until he has once more secured a firm grip on life as represented by all its economic factors.

The reconstruction and rehabilitation of the disabled soldier has become a national problem, not only here, but in all the warring nations. As a result, the public has at last awakened to the great waste of human energy, the result of accidents and disease, which has gone on since the birth of our nation. With the reconstructing, reeducating and otherwise rehabilitating our soldiers the nation will naturally drift into the reconstructing and rehabilitating of all disabled men and women. This will become more and more a necessity because the great economic loss in man power alone which the world has sustained will force every nation to salvage all disabled men and train them to become again useful and efficient units. Never again will we return to the old method of relegating our disabled to the scrap heap. Human conservation will be by far the greatest by-product of the war.

All the nations engaged in this war are doing something toward reconstruction and otherwise reclaiming their disabled soldiers so that they can return them either to the firing line once more or place them back into industry, agriculture, commerce, trades, or some other line of work. The increasing number of permanently disabled men has made the problem in all these nations assume enormous proportions.

The economic demand for man power in these countries is so great that every effort is being made to conserve all the remaining energy and working ability in these men. Almost as much thought and inventive genius is devoted to artificial appliances to replace lost members for these disabled soldiers as is given to solving the submarine menace. Schools and curative shops have been established in connection with hospitals, first to teach the men to use their partially functionally restored members or their artificial legs and arms, and second to teach those who can never reenter their old occupations some new occupation. In most of the countries wonderful schools for the blind have been formed where they are taught to read and write and some useful trade which they can follow. Besides these crippled soldiers there are many medical cases which need reconstructing and retraining to some line of work which will not be hazardous to them in their diseased condition. Of these the mental and nervous cases, the heart cases, and the tuberculous, make up the largest bulk.

Our nieghbors and allies, the heroic Canadians, have been forced to meet these problems during the last two years for thousands of permanently disabled soldiers have been sent home to them. Canada has established reconstruction hospitals in every province with curative shops in connection. Every province has its vocational training center or centers and as the soldiers are dismissed from hospitals they are sent to these to complete their reeducation. It is voluntary with the discharged soldier, however, whether he chooses this opportunity for vocational training or not. The work both of training and of placing these men back into occupations is left to civilian committees in each province.

In England the disabled soldier remains under military control until he has completed all medical and surgical treatment required in the hospital. Many of the hospitals have vocational training departments, but it is made absolutely voluntary on the part of the patient whether or not he chooses the training. As a result, only 15 per cent. of the disabled are choosing vocational training before reentering civilian life.

I have refrained from giving figures as to the number of disabled as I have made my studies from confidential reports submitted to the Surgeon-General's Office. But it is quite evident from studying these reports that the various programs for reconstruction and rehabilitation of the war injured are still incomplete and lack many things to make them really efficient. The greatest weakness in all the plans is allowing these men to get from under military control before their rehabilitation is completed.

In this country we will soon be facing the same problems with regard to our injured as our allies now are. Congress has passed a very good war risk or disability insurance act which will enable us to carry out a very broad program of rehabilitation. It provides that in case of permanent disabilities the injured shall follow such course or courses of rehabilitation, reeducation, and vocational training as the United States may provide or procure to be provided. If such course deprives the injured from gainful occupation, then he may be retained in or reenlisted in military or naval service until the course is completed with pay of last active service and allotments to family. It also provides that no reduction in a man's pension shall take place no matter how successful he is in overcoming his handicap. But if a disabled man after being rehabilitated shows signs of retrograding or is disposed to live on his pension without working, the same can be stopped by the Insurance Bureau until such time as he corrects his ways. It provides for periodical medical examinations and other forms of supervision.

In other words, this bill gives us more or less control over the disabled soldier which will enable us to complete his rehabilitation.

But the success or failure of our work must rest with each individual. We can form all kinds of schools and shops for vocational training; we can make this training compulsory; we can create a great machine for rehabilitation; but unless we stimulate ambition and the desire for this training, and, above all, unless we inculcate the idea of grasping every opportunity to make good by their own efforts, in the hearts and minds of these disabled men, our whole scheme will be a failure.

Thus far our work in the Surgeon-General's Office has been along the lines of studying and preparing for this great problem, arranging for the establishment of hospitals in every one of the sixteen draft districts of the country (there will be at least sixty of these general and special reconstruction hospitals), and mapping out our plans for curative shop and vocational training. We realize that our program for reconstruction and rehabilitation must be made so comprehensive that it will fit in with the programs of existing civil organizations whose purposes are the same as ours must be when we come to the placing of war cripples back into civil life.

At present it is a military problem and as such belongs to the medical department of the army. Closely allied to it is the same problem in the navy and in the industrial army. Later on it becomes purely a civil problem and enters the field of many federal, state, local, and private civil organizations whose duties it will be to complete the rehabilitation.

It is our duty, therefore, to work out a plan that will not only be applicable to handicapped soldiers and sailors, but that will include the handicaps in the industrial army as well; that is, reconstruction, rehabilitation, after supervision, and proper federal insurance for those disabled while employed in industries necessary for the continuance of the war. It is only a step from this scheme to a far-reaching plan that would include proper medical and surgical supervision, reconstruction, and proper rehabilitation, and federal health, and accident insurance, for all workers and for all time to come.

A résumé of our plans for these crippled soldiers will better illustrate the scope of this work.

The disabled soldiers on their return to this country will be received at a large central receiving hospital. This hospital will undoubtedly be located at Staten Island. Here these patients will be thoroughly examined and each individual case passed on by a board consisting of both medical and vocational experts. From this central receiving point they will be distributed to (*a*) general hospitals; (*b*) special hospitals; (*c*) hospitals with special vocational schools; (*d*) direct home or to incurable hospitals.

On their arrival at these hospitals the necessary medical and surgical care will be administered. This problem will remain a truly military matter until complete functional restoration has occurred.

As an aid to this medical care and for the purpose of securing the greatest functional restoration, there will be established in connection with each hospital, physical units consisting of gymnasiums, hydrotherapy and massage rooms, and mechanical appliances such as the Zander apparatus. In addition, each hospital will have its curative shops where the men can indulge in light work of various kinds. The purposes of these curative shops are (*a*) to give mechanical therapy when indicated; (*b*) for their psychologic effect; (*c*) for productivity and beginning vocational training where indicated.

Vocational training schools will be operated in connection with each hospital. This training will be for the following purposes: (*a*) for curative therapy; (*b*) to teach new trades to those who may be unable to take up former occupation; (*c*) special schools as for the blind, deaf, orthopedic, and tuberculous cases, etc.; (*d*) in agricultural pursuits which can be taught in connection with some of the hospitals suitably located.

Some of this vocational training must be given in already established schools such as our state universities where short courses can be arranged or regular courses adapted to our needs.

Many of the disabled soldiers, after hospital treatment is completed, will undoubtedly seek federal and state governmental work such as mailing clerks, mail carriers, guardsmen in national and state reservations, parks, buildings, etc., court clerks, and all other civil service jobs. Therefore, it is planned to establish free civil service schools for the training of this class.

Others of the war injured, with no special training in any line of work previous to the war and with no special qualifications for entering vocational training, will best be placed directly in some industry or trade. Special arrangements are being made with private commercial and industrial concerns for the practical training of these men. During this training period these men should be retained under federal pay and supervision.

The training of proper teachers for these vocational schools is a very essential part of our present plans. Many successful cripples in this country have already volunteered their services as teachers to the prospective war disabled. The practical training which such men could give is quite obvious. Three of the best vocational experts in the country, representing commercial and professional schools, industrial schools, and agricultural schools, are serving as commissioned officers of the reconstruction staff of the Surgeon-General's Office and they are devoting their entire time to the developing of this special branch of the work.

The placing of these war injured back into civil life must be a duty of our Government and should be extended to all soldiers discharged from the army. Thus, an adequate placing system under central control should be immediately arranged. The best plan undoubtedly would be to utilize the National Employment Bureau aided by the various state employment bureaus, which in turn would be aided by their own private associations. A system of reporting on these rehabilitated men must be arranged so that the central office can (*a*) know at all times what work the disabled are doing; (*b*) prevent change of work to hazardous occupations for the disabled; (*c*) by cooperation with the War Risk Board can prevent any soldier from deteriorating into a loafer or an object of charity.

The intelligent application of vocational training, and later the intelligent placing of these men back into civil life where they will be the most efficient, demands a careful study of the present and future economic conditions; the economic demand of every occupation so that the mistake will not be made of overcrowding certain occupations; the demand for men in new industries which will be an outgrowth of the war; union labor conditions and what influence these will have in the placing of our men; the occupational hazards, if any, in every type of work; the study of and changing of all legal obstructions which will tend to prevent any industries from employing our disabled soldiers.

Daily conferences and consultations with various federal organizations are being held for the purpose of making these studies and removing all obstructions for the most practical application of our plans. Let me illustrate: It is well known that the present state compensation laws will interfere in the placing of these disabled soldiers. Studies are now being made so to change these laws that industries can employ handicaps without being held responsible for injuries the direct result of the existing disability, or will not have to pay indemnities for preexisting disabilities. When our disabled soldiers are placed back into industries, questions will constantly be arising as to the responsibility for secondary injuries and diseases between the state compensation boards and the War Insurance Bureau; therefore, it is imperative that steps be taken at once to (*a*) standardize all state compensation laws; (*b*) standardize and classify disabilities and occupational diseases; (*c*) standardize a table showing percentage of disability from a specific injury or disease.

While the actual work of this department is finished after the disabled soldier has been reconstructed, reeducated, and rehabilitated, and placed into active civil life once more, yet this department is vitally interested in the further supervision of this man until he is again established on a firm economic and social foundation in his community. The individuality of the man, plus outside agencies, will have this responsibility.

In order to make our entire program possible and to bring the disabled soldiers to this ultimate goal of complete rehabilitation we must depend on the following:

A. *The man himself.* From the time he enters the army and especially from the time he is disabled, through his period of reconstruction and rehabilitation, he must be thoroughly imbued with the idea that he can again become a useful member of society, no matter what his handicap may be. He must be returned to society enthusiastically ambitious to make good; this is as important a part of his training as to teach him a new occupation. He must be independent, do it himself, and not depend upon charity of any description. He must be kept under military control until his progress in rehabilitation is so far along that he can complete it himself.

B. *His family and the public.* These must be likewise thoroughly imbued with the ideals of reconstruction. The family must be taught to suffer a further separation from the father or son until his reconstruction and rehabilitation period is completed. Public opinion must be moulded so that a loud clamor will not go up demanding the release of the disabled soldier before he has been rehabilitated.

C. *Publicity.* The widest possible publicity must be given to our proposed plans for reconstruction, and later on the public must be kept in constant touch with the actual work.

D. *Friendly supervision and advice.* The rehabilitated soldiers will need kindly advice and encouragement for some time to prevent them from deteriorating. The hospitalization and the hero worship which these men will receive will tend to make retrogression easy and this must be counteracted for some time by proper influences thrown about them after they have again reentered civil life. An excellent program for this phase of the work has been prepared by the Civilian Relief Division of the American Red Cross.

Reconstruction and rehabilitation of the war injured is the greatest humanitarian movement developed by this war. Over there it is destruction. Here it is construction.

The sacrifice which our disabled soldiers are making is terrible, but as a result of it we will see hospitals springing up all over the land for purposes of reconstructing them, and vocational schools where they can be retrained to useful work. Let us make these hospitals a monument to these heroes by continuing them after the war as state hospitals for the reconstruction and rehabilitation of our industrial disabled.

Dr. Patterson: It all goes to show that the Democratic Party has a lot of brains, when it gets a man of the type of Major Mock to come to Washington and put this thing across. He is a good Republican; but, like the rest of us, he is helping the Democratic Party out.

This subject is of such interest that I am sure we shall hear much in the discussion of it; and it is my privilege to introduce to you, to open the discussion, a citizen of England who had been in this country for some years, but who, when the war came, went to England and offered his services to his native country. He is now serving in the English Army. He was first in the field, and was later brought back and placed in charge of this reconstruction work; and it is my great pleasure to introduce to you Major R. Tait McKenzie of the British Medical Corps, who will tell what has been accomplished in England.

DISCUSSION

Major R. Tait McKenzie, Royal Army Medical Corps: When your chairman introduced me as a citizen of England, I was reminded of the experience of another Scotchman, who came down to London on business. When he got back home, his friends asked, "How did you like the English?" and he replied, "I did not meet them much; you see I dealt only with the heads of departments." The term that we like to use is British in that we all play a part in our Empire's war.

Now, during the last three years, the world has been engaged in what is to it a comparatively new industry — an industry that has overshadowed all others; and that has been the industry of war, the industry of destruction. The industry of destroying life and property has been on a scale that has never been approached in any previous war. In the land that was taken over by the French and British troops in the advance of the Somme, villages which had been beautiful, prosperous, and smiling were literally left without one stone on another, and every cross-roads had been opened up by a blast that left a yawning crater. That will give you an idea of the systematic way in which the Germans destroy property. Behind our lines you will see building after building piled up with various forms of equipment, which is being reconstructed in order to be used again in the firing line; but the most important and most valuable by-product of this industry of destruction has been the mangled and mutilated men sent back to the hospitals, that we have had slowly and painfully to bring back to lives of usefulness and of freedom from pain.

I think, perhaps, that it might be of interest to you, if I spoke for a little while about my personal experiences in this work in England, Scotland, and Ireland, and perhaps, from the mistakes that we have had to make on account of the way in which this tremendous task was thrust on us, without any chance to prepare, you may be able to glean something that will be of use to you.

As a matter of fact, I know, as Major Mock has already said, and from other sources, how thoroughly the government is taking the matter up and urging these various agencies to work in getting the men back into civil life again.

In the spring of 1915, it was my good fortune to be associated with the physical training of what were known as Kitchener's armies. These were raised first in lots of one hundred thousand, and "The First Hundred Thousand," which was immortalized in Ian Hay's book, was succeeded by the second and the third hundred thousand, and so on, until the number had risen to a couple of millions. Then they came more slowly, and the entire number that had been raised up to the time of conscription was about five millions. If the United States were to raise an army, man for man like this, according to population, it would mean the drafting of about seventeen millions of men.

In the inspection of these training camps, which ran from thirty to eighty thousand men, it was my duty to travel from one to the other, and we repeatedly found a number of men who were unable to take their full training. Now these men were paraded, and, in the course of examination, we found that many of them were suffering from conditions that could be cured by proper treatment, sometimes by operation, but more frequently by some form of physical therapy that would bring them back to military usefulness. The number of these was very considerable.

Then we found, in the various hospitals near these camps, a large number of men who were not under any treatment and were gradually lapsing into semi-invalidism. You know, when a man is wounded, he is taken back to the dressing station, which is well to the front. Then his wound is dressed or looked at, he is eased with morphin, and he is sent to the casualty clearing station, where the men are sorted out and sent to the base hospital, which is usually a frame building equipped very much like any of our hospitals. There the men are sometimes kept until they are able to return to the front; but the more serious cases among the British or Canadian troops are sent across the Channel, to the great base hospitals in England.

I remember being, one night, on duty at Manchester, and receiving train loads of wounded. These men came in on a Monday night. They had been in the advance on the Somme, and had been wounded on Saturday afternoon. In the interim, they had passed through the various stations, had been sent to the seacoast and shipped to Southampton, and had been distributed to the different base hospitals. These men who arrived in Manchester on Monday night were comfortable, and their wounds were well dressed. This shows the efficiency of the work being carried on.

After that, if they are not fit to be sent back, they are sent to the convalescent camp, where they may stay two months, either in the convalescent camp or the convalescent hospital. At that time, in 1915, there was no other provision for the treatment of these men, except in the Red Cross Hospitals founded by private benevolence in country houses. Everyone who had a country house near would volunteer to give it up for the treatment of men who had to be cared for over long periods of time. There was a shortage of military doctors, so they were taken care of by practitioners who did not know much about military matters, and by civilian nurses, and there was demonstrated the impossibility of handling soldiers by civilians. Many of the men would refuse to take the treatment, break bounds, get drunk, and resent any form of discipline at all.

Also, they were very much bored by the attentions they received, because, you know, hero worship is pretty widespread, and it was the custom for the ladies in the neighborhood to divert themselves by going to the hospital in the afternoon, to get the accounts of those who were wounded regarding their life at the front. They tell this story of a man who was particularly irritated by this attention: His head was bound up so that he could see out of but one eye. The lady who was visiting him said, "and where were you hit my poor man?" and he replied, "Madam, I was hit in the foot but the bandage slipped."

The result of this kind of thing was that an enormous number of men who could be made fit for military service were not being made fit for it, but were slowly degenerating into hopeless invalidism. On the basis of a report sent in to the War Office, a plan was devised that now seems the obvious plan; and that was to segregate these men in camps under military discipline, the supreme command being in the hands of a military officer, and the medical command being in the hands of a medical officer. The men were divided into companies, each under an officer. that officer being himself an invalid. The first of these camps was established at Heaton Park, near Manchester, where accommodation for four thousand men was available. It was soon filled up. In addition to that camp, in the summer of 1916, eight others were established, with the same capacity each, and now there are sixteen of these depots for the treatment of these men, who are under military discipline. They have now increased the capacity of these to five thousand men each.

I think that I could show better the course of treatment followed for these men in order to bring them back to usefulness, either from a military standpoint or from that of civilian life, by illustrating the work done at this camp at Heaton Park. So, if you will throw the first picture on the screen, I will talk as the pictures are shown.

The great danger to these men in hospital or camp is that of idleness, and the endeavor is to keep them busy at some form of work.

This is the main building Heaton Hall, and all the windows with the white blinds are in rooms used for treatment. The rooms were fitted up with electric appliances, tables and beds for massage and appliances for the training of muscles and the stretching of adhesions.

This is a parade of the men who were under treatment at this camp. In the front line were the Class A men, the men who were ready to return to the front as completely cured and in condition for active service again. The second line is composed of what we call Class B men; that is, men fit for service on the lines of communication, but not on the front lines. Behind these are the men who are fit to work at home in sedentary occupations, and the men under treatment.

In addition to the main building Heaton Hall, we took one of the huts in which the men slept and built an engine house beside it, capable of supplying a large quantity of hot water, and we turned this hut into a hydrotherapy institution with a douche room and various appliances for this kind of treatment, which is exceedingly useful in these cases. There is nothing that differs from the ordinary form of hydrotherapeutic treatment except the appliance that I am showing you now.

This is what we called the pool. It was kept at a temperature of 94 F., and we took the men in there in lots of twelve at a time. The water is four feet deep and half way down there is a shelf on the side, where the men could sit for an hour. Cases of disorder of the heart—rapid and excitable heart, with tremors and various disturbances of the senses, were the ones that really did the best on this treatment. Those with disorders of the circulation were much improved. After he had been kept here an hour the man was put to bed for an hour and kept quiet.

After a while we started these cases with light exercise, such as walking half a mile, and light, simple gymnastic exercises. As the men got better the severity of the exercises was increased, and they were finally able to go on full training. If they could stand that they were put in Class A. A good many never got to that point.

A form of hydrotherapeutic treatment developed by the war is the whirling water baths. These small baths are used for treating wounds of the extremities, a great many of the wounds received being of that character. The water is sent in by three feed pipes and the current is driven in at high speed, so that it forms a whirlpool in the bath. The temperature is usually started at 105 F., and raised to 112 F. The limb is kept in the bath for twenty minutes and is then ready for subsequent treatment by massage and exercise. A good many of the men have painful, blue, cold limbs, the result of interference with the circulation. A good many scars that appeared small on the surface had masses of scar tissue underneath, which caught the nerves and vessels, making the extremity sensitive to cold. A treatment of twenty minutes changed it to a pink, comfortable looking arm or leg. The treatment was exceedingly useful for stumps.

In addition to that, we had small baths in which electricity was given, usually in the form of galvanism or the sinusoidal current. Galvanism is usually given in connection with ionization by potassium iodid, chlorin, or salicylate of soda. We found it good for cases with extensive scar tissue.

We had no large appliances for giving radiant heat. We used small shoulder appliances, and by putting a row of them on the back, we could give a good treatment over the whole back. Afterward we got better appliances. The main reliance, however, was placed on massage, and we looked on the treatment with radiant heat, electricity, and hydrotherapy as merely a preparation for the massage.

I show this picture of massage to illustrate the rehabilitation of the men who otherwise would be helpless. This masseur has a small, dark spot on the outside of his eye, level with the eyebrow. He was in the Irish Guards who went over with the first army. In the early days of the war he was shot through both temples, and both optic nerves were divided. He is permanently blind. He was taken in charge by Sir Arthur Pearson, who is blind himself, and who undertook the care of these blind men, and he was taught massage. He took a course, passed the examinations brilliantly and was one of five masseurs that we secured for Heaton Park. They were the first five blind masseurs, all wounded in the war, to be employed. They can now make a living at ten or twelve dollars a week.

After massage of a limb we found the reeducation of the lost function was the most important thing. The treatment had been purely passive, by massage, radiant heat or electricity, up to that time, but we may stretch all the ligaments and muscles, and yet not have a useful joint until the patient can do the movement himself. Therefore, we started by making appliances, which were pretty crude, for the purpose of completing the work of rehabilitation. There was no provision for the supplying of these things, so we had to get them partly through the Red Cross and partly through private subscription.

In this little appliance the hand is thrust into the glove, and, by bending and straightening the fingers at the metacarpo-phalangeal joints, sandbags are pulled up. You can load the finger with any required weight, and get the amount of exercise that the muscle is capable of doing. These are adjustable.

The next movements are bending and straightening the metacarpo-phalangeal joints, then the hand grasping a roller, the weight hanging down with a weight is rolled up by flexion of the wrist joint, and another handle is used for pronation and supination, the patient standing at the side and this is for circumduction of the wrist and is done by turning the handle. When the patient is unable to do it, he is assisted by the nurse who turns the wheel, which you will recognize as having come from a sewing machine.

This is another sewing machine. The top was taken off, a foot-piece put on, and a large weight was hung from the driving wheel. By pulling back and forth on the handle you swing the weight and stretch the tendo achillis. This machine gives circumduction to the ankle. The crank goes up to a driving rod, which is turned by the patient, so that the patient gives himself circumduction by turning the handle.

This is an adaptation of the bicycle. Under the hind wheel you have a roller and a lever with a weight on the end, and the amount of pressure is regulated by the length of the lever. It was impossible, in most cases, to get special apparatus, so we used the bicycle as we found it.

As the men improved it was possible to put them in small classes. In these we had prescriptions for exercise of different regions of the body, and one attendant was able to keep a dozen men under his care. We found that one attendant could treat about 180 men in the day, and give them these prescriptions. The man in the foreground is taking a hip exercise, and the others are doing arm exercises, except the one at the end, who is on a tricycle.

After they were graduated from this individual treatment they were sent out to join in the walking stick brigade, which consisted of men who could just get about. A walking stick was given to them, to distinguish them from the others, and they were put in classes suited to their condition.

These men are raising their heels by the aid of their stick. They then bend their knee slightly and in time lay down the stick and do a certain number of exercises for the arms and trunk. Then they are put in large classes, and do exercises founded on the Swedish system, such as are given to every recruit in the first few weeks of his stay in the army. Some of these exercises are breathing exercises for men who have had poisonous gas. Each man is allowed to choose his rhythm for himself. That is why you see men in different stages of the act. Some breathe faster, and some more slowly. They were instructed to exercise in the ordinary rhythm of their breathing. Some men were unable to do any violent exercise at all. That is particularly true of men suffering from shell shock, men suffering from the concussion of the high explosives, men with neurasthenia, and men generally knocked out by the fatigues of the front.

This is a sample balancing exercise with which they started. After they could do that well, we made them walk on a horizontal beam three feet from the ground.

That exercise I showed just now was used for exercising the knee and for balance, and this is another for the same purpose. The man who could run through the wire entanglement without tripping was considered to have enough movement in the knee joint to be able to go back to the front.

In balancing exercises the pulse rate would often go up high as soon as the man was put on the walking beam. A man whose pulse rate was normal would play out as soon as he had been put under this excitement. It was a good test for that purpose.

Among the most important exercises was that of walking. We started with half-mile walks; and from there the distance went up to four miles, walking in quick time, and sometimes with music. This is a crowd of men walking. The three officers there were wounded. The one at the left was shot in the forearm, and the ulnar nerve divided. An operation was performed, and recovery took place. He was in the depot three months, and then went back to the front with a fairly good hand. The man in the center had a fracture of the skull. The other man had a damaged heart, so that he was of no military use afterward.

This is a typical inspection of the physical training that took place at frequent intervals. The inspecting officer is the man who is next to the Director General of Medical Service. He is walking up and down, asking inconvenient questions of every third or fourth man—whether he gets enough to eat; whether he gets treatment regularly; and if not, why not; and so on.

After the treatment was over, the men were divided into units and sent to their regimental depot. This is a group of men in Class A marching out of camp. They have their kits, with their stuff in them. They went back to their regiments, and, after three or four weeks of hardening exercises, rejoined their companions at the front. Inside of six months at our depot, we turned over twelve hundred fighting men to the front. Our object was to get the men back to the front; but the work is the same, whether you are getting a man back to fight in the trenches or back to fight in the ranks of industry.

Now we will run through a few typical cases, and give you an idea of the progress they made and the kind of treatment they had. This man was wounded in the back. The dark spot in the film at the neck is the entrance wound, and the large wound at the bottom, the wound of exit. It was a simple, clean wound. Along the course of the bullet was a great deal of scar tissue. He was treated by radiant heat, massage and gymnastic exercises, and made a quick recovery.

This man was wounded in the arm and forearm. He had ankylosis of the elbow and fingers and great wasting of the interossei, and the other muscles of the hand were stiffened. He had been kept in the splint too long. The roentgen ray showed very little organically the matter. He was treated by hydrotherapy, massage and reeducational exercises. He made an uneventful recovery, and went back to the front in about three months.

This is a very typical scar, the result of a shell fragment. When a shell bursts it tears up into shreds, jagged pieces of metal, which shear away whatever they hit. In this case, the fragment came straight down, went along his back, and tore away most of the muscles and some of the spinous processes. He was put on hydrotherapy and massage; and in the course of time, several red points appeared and sequestra of bone came out. He made a good recovery, but he will not have complete recovery of the muscles of the back.

This is a curious case. The man was lying on his face and raised both of his heels; and, as he did so, he got a wound entering the sole of the foot near the heel, the bullet coming out the dorsum, and making two additional wounds of the other ankle by going through the ankle joint. This patient illustrates the difference between a man who is fit for military, and one who is fit for civilian life. He was all right for the latter. He could walk a quarter of a mile without trouble; but in the military march, he could not get along. The foot would play out in a mile, and he would have to sit down. He never could be able to march in the regiment.

This is one of a frequent class of cases; claw-foot, partly due to injury and partly to functional conditions. The toes are drawn up into extreme extension of the metatarso-phalangeal joint and flexion of the other joint, and the foot is no good from a military standpoint. The case was treated by reducing the claw-foot, remodelling the arch, and by exercises. Only mild cases of this kind recover.

This is a case where a shell fragment has bitten out some of the outer part of the arm. The man is able to do pretty nearly anything in civilian life, but is no good from a military standpoint.

Here is a man with a bullet wound in his back, the missile having smashed his scapula. He is able to do pretty nearly everything except carry a pack. The weight of the pack over the scars quickly becomes intolerable. For this reason he had to be discharged as unfit for the service.

This man is a man who caught a bomb in the trenches and endeavored to throw it back before it exploded. In the early days of the war, they were not sure of the length of fuse that should be employed, and often made it too long; and their opponents would often catch the bombs and throw them back before they exploded. Unfortunately, this bomb exploded while the man had it, causing him to lose most of his hand. He had persistent pain afterward, which was treated in the whirlpool baths and massaged and he got a useful and painless stump after all.

This is another case of a shell fragment taking away the ulnar side of the hand. It was treated by means of radiant heat and exercise, and he got along all right.

This is the arm of the officer you saw before. The bones were shattered, and not a very good result was obtained anatomically; but early in the war they learned to look for a functional result and let the anatomical go if both could not be obtained, as they frequently could not be. The functional result was good in this case.

Here is a very good example of a man who has been close to a high explosive shell at the time of its explosion. When these shells burst, they scatter bits of gravel and dirt, causing many small wounds. This man had 113. The larger ones were due to bits of steel, but the smaller were caused by pieces of gravel, which have kept coming to the surface ever since. He got sufficiently well to return to the front but it was thought that he had earned a place in civilian life.

This man was in a dugout when a shell exploded which drove the front of the dugout in, crushing his chest. His ribs were broken and any pressure would cause the veins to swell up. He was in a precarious condition.

This man was also buried in the crushing of a dugout, and the only result in his case was paralysis of the abdominal muscles, so that he was able only to waddle. The muscles were tested, and found all right. He was put on massage and corrective exercises and made a good recovery.

This is one of the few cases of malingering that we have had. It is not so frequent as one might expect. A good deal depends on the doctor. This man came with a much swollen hand and arm; and by treatment with hydrotherapy and massage, it became normal. Each day, however, the swelling returned, and the reason was a mystery. On careful examination, we found a red line around the arm and discovered that he was in the habit of tying a light ligature on the arm when he went to bed, so as to have the symptoms for the doctor the next day. That, of course, is a crime in the army, but we put him on the police force, on the principle that like cures like, and he did very well.

These two men are representative of a type of case that we sometimes meet with; of men who have facial deformities caused by bullet wounds. The upper man was sighting his rifle when a bullet struck him and produced that facial deformity. The other man was sighting his rifle also, and the bullet entered behind the eye and took off the nose making its exit through the lower jaw. These men are unable to earn their living because it is impossible for them to get jobs on account of their repulsive appearances. The treatment was to make a mask of thin metal, colored to imitate the complexion of the rest of the face, and apply it so that the deformity was hidden. This required the services of a sculptor to model the missing features. Sometimes, when the whole side of the face, the eye, or the upper lip are gone they can be made so presentable that they can get positions as chauffeurs or in public places, where people will not be shocked by their appearance.

Now just one word in closing, and that is, about the difference in conditions between England and France, and between Canada and the United States; because our conditions are very much the conditions of Canada. In England, the appliances used had to be made of such material as could be gathered, and a good many local committees were established to take care of these men without much coordination of effort. It was difficult, later, to get them to give up their individual existence in favor of a national scheme. It is even worse in France, where they have four different committees having control of the rehabilitation of the men. In Canada there has been made an advance in this respect. They have a Military Hospital Commission which acts with the military authorities, collecting the men in England who are not likely to be fit for military service, and having them sent to Canada. There they have established a score of hospitals, which I had the privilege of going over last summer; and in them, there have been installed appliances for hydrotherapy, electrotherapy, reeducation, and massage. A series of workshops has been opened in connection with these hospitals, where various forms of vocational training are carried on. In every hospital there is an officer, who ranks with the other officers, concerned with the vocational training of these men, whose duty it is to examine them and decide what they can do, and to see that they receive the necessary training; and when they are ready to be returned to civilian life, they are reported to the Provincial Committees, corresponding to the State Committees here, which undertake to place them in positions. I believe that there is very little difficulty in getting occupations for men who have taken the training and are really well trained.

Major Mock, however, has placed his finger on the weak point, which is that this training is not compulsory. It is difficult to make it compulsory; and the plan which the Surgeon-General's Office has undertaken, of making it to a man's advantage to carry this training out and penalizing him if he does not, is, to my mind, the first step in the right direction. The other countries have temporized with it, and yours should be congratulated on being able to start on the right lines from the beginning. You have not to wipe out existing committees who did good work in an emergency but whose work is done. You have not to meet entrenched interests, which are inclined to hang on to their privileges to the last gasp. I wish to congratulate the Surgeon-General's Office and the committee on this subject on their splendid start, and wish them the best of luck.

Dr. Patterson: I am sure that we cannot thank Major McKenzie enough for this perfectly splendid talk that he has so kindly given us. The State of Pennsylvania has always tried to be in the lead in this work. We have an Employment Bureau that is second to none and for some time past, Mr. Jacob Lightner, the director of our Employment Bureau, has devoted much time and thought to placing of the handicapped in positions where they can earn a livelihood for themselves and their families, and not be a charge on the community. Therefore, we will ask him to tell what has been accomplished by his bureau.

Mr. Jacob Lightner, Director, Bureau of Employment, Pennsylvania Department of Labor and Industry, Harrisburg: Major Mock in his address, and Major McKenzie in his discussion, have given the people, not only of the state of Pennsylvania, but also of the United States, a clear idea of what we have ahead of us. You have seen pictures of the kinds of wounds that are being received by the boys who have gone to the front, and of what problems you are to expect and what assistance they should expect on their return.

I have been asked to speak on what the state of Pennsylvania has done and what we contemplate doing. We started on this work as early as we could. The Employment Bureau, due to the kindness of the ladies of the Emergency Aid Association of Philadelphia, were able to secure the services of a man whose entire duties were to obtain employment for our crippled people.

We are proving that the loss of an arm, a hand, a leg, or a foot does not necessarily prevent a man from being of some use in the industrial and commercial world. The bureau has always conceived it possible that among the many industrial establishments throughout Pennsylvania, there ought to be some that would give these men such work as they could do. It is only lately, however, that an extensive campaign has been waged toward that end, and the results obtained are highly gratifying. Up until the first of November in one district alone there have been placed in positions 408 people who were incapacitated in various degrees, ranging from a complete loss of hearing and inability to speak, down to a stiffened leg, the result of a broken kneecap. Several men who had lost both lower limbs were given positions at threading bolts, where the work was of such nature that they could sit and have dextrous use of their hands, accomplishing as much as a man of sound physical condition.

The New York *Herald* quotes that at No. 22 Park Avenue, which is a large airy store with plate glass windows bearing the inscription "The Double Duty Finger Guild," there are long tables inside down each wall at which blind men work at winding coils for armatures and similar apparatus. This work consists of wrapping with tape, coils of wire used in electrical machines and does not require the use of machinery but depends solely on the touch of the fingers of the operators who are trained to such an extent that they do the work with ease and precision. It is perfectly smooth, which is very desirable in electrical winding and insulating.

I made an inquiry as to the percentage of output of this Guild, and have received a reply that the output of acceptable work done by these blind people has increased more than 22 per cent. over that of men with good eyesight; because, as they explained in their letter, instead of having their sight to depend on, they had to depend wholly on the finger's touch. Thus, their work was more even and, for that purpose, was more acceptable.

I read a very interesting article recently of a blind man who studied the use of the dictaphone and typewriter. He was able to turn out excellent work in this manner, and work as good as the other typists who had the use of their eyes.

In Philadelphia there is a bolt manufacturer to whom our office supplies crippled workers. This manufacturer employs none but handicapped people. In an interview on the subject, he stated that his first interest in them was due to the fact that he had a child that was a cripple; and that he was naturally drawn to these persons. He claims that in his family of employees, all are most happy to know that they are earning their own living.

Some of the handicapped workers placed by this bureau are as follows:

A man with right artificial leg was placed in a tin can manufacturing plant running a small punch machine, a sitting-down job where he can earn from $10 to $14 a week.

A man with left hand amputated is filling cans in a paint plant. This work can readily be done by a man of this type as they only hold the cans in place until they are filled. He receives $9 a week.

A young man with paralysis of the left side has been placed with a dental manufacturing company learning a trade making small instruments. This job will pay him from $18 to $20 a week in a few years.

Three men were taken on in a nickle plating plant as polishers. One has lost his right leg and the other two have hernia. They are sitting down at their work and after a couple of weeks' experience, can earn $12 a week.

An applicant with a right artificial leg was placed in a plant manufacturing automobile bodies as a stripper, working on a piece-work basis, earning from $12 to $15 a week.

An applicant suffering with nervous trouble was placed in a chocolate factory packing chocolates at $2 per day.

A young man, 23 years of age, had worked in a chain works for several years, but owing to the heavy lifting, nerve pressure on the spine resulted. He has been placed with a rifle manufacturing company as inspector at a sitting-down position where he will have nothing heavy to lift. This is a piece-work job paying from $12 to $15 per week.

An applicant with crippled feet, who cannot stand any length of time, was given employment in the plating department of a wire manufacturing plant at $10 a week.

Applicant with strained blood vessels of the throat and heart was given work with a metal stamping company, Camden, sitting-down position with no exertion, which pays him $9 a week.

Applicant 18 years of age, with left leg amputated, was offered work with a brush manufacturer to learn trade at $3 per week for one to two months. This trade pays $15 to $18 a week.

Applicant with left leg affected from paralysis was given position as night watchman at $14 a week.

Man 31 years old, single, had fractured knee and was left very lame, given work as electric crane runner, having had experience in this line at the Bethlehem Steel Company.

Man 61 years old, married, had left leg amputated at knee, was placed in a metal stamping concern, inspecting small oil cups, a sitting-down position which pays $10 a week.

Man 67 years old, single, unable to do any heavy work, was given a position as doorman in a hospital, paying $20 a month and board.

Man 28 years old, married, has bone infection of right leg, was given a position running small lathe in a machine repair shop, working on a piece-work basis.

Man 27 years old, married, had been operated on for gallbladder trouble, which left him unable to do any heavy work. He was placed in an electrical manufacturing concern, operating a small machine which will pay him from 20 to 25 cents an hour.

Woman 32 years of age, mentally unbalanced, was placed as helper in the pantry of a hospital at $17 per month and board.

Applicant 41 years of age, married, right artificial arm, was given work as collector, $18 a week and commission.

Applicant 27 years of age, single, right hand paralyzed, was employed as water tender for horses.

Applicant 31 years of age, single, left leg amputated at knee, was employed as inspector.

Applicant 47 years of age, single, contraction of muscles of the left leg, was employed as helper at 28 cents per hour.

Applicant 39 years of age, married, has chronic bronchitis, was given work running small punch press, earning $12 to $15 a week.

Applicant 59 years of age, married, left hip fractured, was given employment in a paint manufacturing plant mixing paint and filling cans at $12 to $15 a week.

Applicant 60 years of age, single, very feeble and unable to do any heavy work, was given position as watchman at $14 a week.

Applicant 24 years of age, single, has left arm amputated at shoulder, placed as clerk with a transportation company at $50 per month and with chance for advancement.

There are several hundred of these cases, all as interesting; but I want to say that this work will become more interesting as time goes on. Now, I feel, is the opportune time to lay before you just one thought; that is, that when Major Mock of the National Government Service comes to the state of Pennsylvania with the request that we cooperate with him in planning for the work of rehabilitating the wounded soldiers and placing them in positions, you men of the medical profession, who represent the big manufacturing plants, will cooperate heartily with him as you have an opportunity second to none of knowing what a cripple is capable of doing. We have in our service in the Labor and Industry Department a corps of inspectors that I believe cannot be excelled in the United States. Their work shows it. They also can aid wonderfully by making a study of the machinery that a cripple can handle, and the positions which a cripple can fill.

Take, for instance, a blowing engine: I remember when I was a boy in Allegheny County, at Braddock we had the largest blowing engine in the state (and, I judge, in the United States), at that time, and it was managed by a one-armed man. There is no reason why a man with only one arm or one leg cannot manage most of our pumping machines, many of our lathes, and almost any drill. An electric crane can be run by a man with one leg.

There are many positions in which these crippled soldiers, sailors, and marines can be placed, and it is time to give this matter some thought and study; because just within a few days, we have received reports regarding some of our men who have already been maimed in battle on foreign shores, and will soon be returned to us. I feel that all our industries should start today to train men by intensive industrial training, and should take up now the development of their mechanics, to use the system later in instructing our crippled soldiers.

It is the intention of the bureau to assist Major Mock by sending out, through the State Department, a questionnaire to the manufacturers, asking them to cooperate with us and if they have positions a handicapped soldier or sailor can fill to turn them over to us for the placing of soldiers.

If the officials in our industries will give study and thought to this matter, we can become prepared while we have the time, to make places for our wounded boys on their return. I am very much afraid that if we are not ready to receive them, many of them may become loafers on our streets. We think that to those who have offered their lives for us, the manufacturers will offer at least a position where they can earn a living.

Dr. Patterson: The Chair would like to throw this very interesting subject open to general discussion by the meeting, but, unfortunately, it is getting late in the afternoon and we have three more papers which it will be our great privilege to hear. The first of these papers that I shall call for is, "The Fight Against Industrial Diseases—the Opportunities and Duties of the Industrial Physicians," by Dr. Alice Hamilton of the United States Bureau of Labor Statistics.

I feel quite sure that Dr. Hamilton needs no introduction to any audience of physicians, for I am sure that you are all familiar with the magnificent work which she has so ably performed in the investigation of many of the industries of this country, and her clear analysis of the hazards of many of these industries has proven enlightening to every physician interested in industrial work.

The subject of industrial diseases is one that is always with us and always before us for consideration, and it will now be our privilege and pleasure to have Dr. Hamilton tell us how the fight for better health conditions may be waged.

THE FIGHT AGAINST INDUSTRIAL DISEASES

THE OPPORTUNITIES AND DUTIES OF THE INDUSTRIAL PHYSICIAN

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Fighting industrial diseases is much more difficult and complicated than fighting industrial accidents. In the first place, it is much less easy to be sure that the disease is of industrial origin. One does not always know the exact cause of an explosion but, at any rate, one knows that the trouble originated in the plant, which one cannot always say with certainty in regard to a disease. It is not always possible to trace it to the occupation. Then there is the factor of varying susceptibility to industrial poisons. Of course, there is, in a way, an individual idiosyncrasy to accident. Some men are more awkward, more careless than others. But that can be guarded against more easily than can the idiosyncrasy to certain forms of disease, which does not betray itself until it is too late to save the individual from the disease.

Therefore, the problem of industrial disease is not only more difficult, but it is more peculiarly a medical problem. The prevention of accidents must be in the hands of the safety engineer; the prevention of diseases must be in the hands of the physician. He cannot decide where the exhaust for removal of fumes is to be put and what is to be the method of removing dusts, but he must direct the attention of the engineer to the danger points in the plant, having discovered them through inspection and through the examination of the workers.

The prevention of disease, then, is the special duty of the industrial physician, and his most important duty. In the case of accidents, he will largely have to patch up the evil that has been done; but no longer now can he think that he is doing his full duty to the men under his charge if he cures only the diseases that they have contracted. That used to be the attitude of the industrial physicians. I remember that when, in 1910, I had finished speaking of lead poisoning to a large convention of white lead men gathered in annual convention, two young industrial physicians said to me, "This is a new idea to us. We have not looked at the matter in that way before. It did not occur to us that we could keep the men from getting leaded, we simply expected to treat them for lead poisoning." That was only seven years ago, but it was really in the dark ages of industrial hygiene. Now industrial physicians believe that their first duty is to keep the men from getting sick.

How should the industrial physician go about this matter of preventing industrial diseases? He must first learn his industry, and know it thoroughly. How else can he give proper advice to the workers, to guard them from its dangers? When I was studying lead smelting, I was taken to a good smeltery; and I found that there were certain very dangerous spots there. One was where they dumped the Huntington-Heberlein pots. These pots are lifted by the crane and dumped, so that the smoking hot charge falls with great force, scattering hot lead dust and fumes. There is no way for the men to escape these fumes. They must go forward with hammers and break up the refractory parts of the hot charge, in order to shovel it into the dump. I went to interview the physician in charge of the plant. He was one of the foremost physicians in the city, and a well trained man. He talked about the carelessness of these men in not scrubbing their finger nails and attributed the lead poisoning among them to their getting lead under their finger nails. He might as well have tried to prevent typhoid fever in men allowed to drink water polluted with the typhoid bacillus by making them wash their hands before dinner.

The physician in charge of a plant should know every substance that is being handled in it, and its effect on the workers. If he does not, he will be surprised by all sorts of mysterious happenings, and will run the risk of sending back to dangerous work men suffering with the preliminary symptoms of poisoning. Not knowing the danger, he will not recognize the preliminary symptoms. I have had experience concerning this. I have had industrial physicians tell me, "There is some kind of gas there that chokes the men; I do not know what it is." One physician told of a man who was found dead in the bunk house, and the coroner had called it heat prostration; but that he did not know whether the nitrous gas might not have had something to do with it. He was the physician in charge of the plant, and did not know any more about it than that. "The other day I came across a case of marsh gas poisoning in a man who had been shoveling ashes," another physician told me. "Why do you say that it was marsh gas?" I asked. "Well," he answered, "they said it was." He seemed to think that because the works were situated in the neighborhood of marshes, it might have been marsh gas that was responsible. I suggested that it might be carbon monoxid, but he did not know whether it was or not. He had no idea what gas a man shoveling hot ashes might be exposed to.

It is that sort of ignorance that an industrial physician should never be guilty of. I speak of these instances as if they were the only ones, but they are not. I have come across industrial physicians who were thorough, and would watch the men, and go to the manager of the plant and say: "I am getting a large number of cases from this room. What is the matter?" That is the sort of thing that we should have from a physician really protecting the men under his charge. Study the methods used in the plant so well that your advice will be heeded. You are dealing with practical men; and if you give advice that is not practical and could not be carried out, they will not attend to anything else you say. Do not do that. If you do, not only will the foremen despise you, but your advice will result in absolutely no improvement in the plant.

In one great smelter that I visited, which had had a good deal of trouble from lead poisoning, the management had put up the best equipped washhouse, lunch room, shower baths, etc., all luxurious and expensive; and yet they had as much lead poisoning afterward as before. It was pathetic to hear the manager's disappointment. But the men who worked on the ore hearths were breathing in abundant fumes which contained 35 per cent. fairly soluble lead oxid. The physician connected with the smelter had been in the ore-hearth building but had given no advice about it because he did not know.

I think that, perhaps, the most striking instance of that sort of thing was in a certain plant where they were handling large quantities of litharge and red lead. I went to see it after it had been open a month, and already it was covered with layers of these poisonous dusts. It was quite disconcerting and disappointing to the managers to find how little I could say in praise of the plant. One of them finally brightened up, and said, "Come see this." I saw a wonderful air-washing machine, very expensive. He said, "Every cubic foot of air is washed before it comes in." I felt like saying, "You had better wash it before it goes out, or it will poison the neighborhood."

We are encountering every day, now, new poisons. Everything about them should be studied. If they are not, we shall be shocked by fatal cases of unexpected poisoning, as factories make changes and improvements in their methods. For instance, I know of a case of poisoning by benzyl chlorid, which the physician did not know to be a poison. We have had several cases of fatal arsenical poisoning in men extracting ores by the cyanid process. The physicians did not know that arsenical poisoning was possible in such works, but it is their duty to know such things.

Now I have emphasized these features of prevention, before speaking of education of the men. The working man can protect himself to a certain extent, but not wholly. The responsibility is more on the physician than it is on the workman; and this, I think, is not fully realized by employers. It was realized, however, by one intelligent head of a great smelting works, a German, who has since died, who received an international prize for a book on the prevention of lead poisoning among smelters. He was not a sentimentalist, but a very practical man. He said that where a few scattering cases of occupational sickness arise, the men may be at fault; but where numerous cases occur, it is the management that is at fault.

Education of the workers is good. It should be given largely by the physician, and by word of mouth. I do not lay so much stress on printed instructions as on instruction by word of mouth. I think that the best method that I know of was described by Mr. Griswold of the du Pont Company in connection with the guncotton plant at Hopewell, where the work involves danger, both from occupational poisoning and from accidents. He does not instruct his men about all the dangers in all departments; he takes them in groups from the various departments and instructs them by means of illustrated talks concerning the dangers in their own work. I think it is an excellent plan. The instruction by means of printed cards or word of mouth must be given in the men's own language. Some of them do not understand English, but pictures can be understood by all nationalities.

The doctor has a great opportunity in his individual work with the men, and many do not realize how this affects the men's attitude toward their employers. I have come across widespread bitterness against a plant that could be traced largely to the attitude of the company doctor, and I have seen warm friendship and gratitude that was also traceable to him. Men, no matter how small their wages, or how humble and ordinary their work, ought to be treated with a certain amount of respect, and the company doctor who does that makes each man think he is worth something. Workmen are all more or less suspicious of their employers and the physician who succeeds in overcoming that feeling is working, not only in the interest of his charge, but also in the interest of the company.

The task of the physician regarding the prevention of disease consists in research and education. As to research, we must remember that this is a new field to us. We need to know all about it. We cannot take British, German, Italian and French descriptions of the occupational diseases of different industries and apply them to the same industries in our country, because our industries are different from theirs. Many physicians in this country know this, but do not give out their knowledge. The industrial physician should be a research worker in the best sense of the term, and should be animated by the scientific spirit in spreading his knowledge. If not, his knowledge remains locked up in his own bosom, and he does not do anything for the growth of science. If all do that, we shall be left out of the march of progress in this branch of medicine. This would be most deplorable, because we have a very valuable contribution to make to it.

Let me urge all industrial physicians to work for the prevention of disease, not only in the particular plant with which they are connected, but in all establishments of a similar character. That means the publication of the results of their work, and of all discoveries that they may make.

Dr. Patterson: I am sure that we are all indebted to Dr. Hamilton for the inspiration she has given us. Now we are ready for the report of the Nominating Committee to be presented by its chairman, Dr. Schereschewsky.

Dr. Schereschewsky: Your committee appointed to nominate officers for Chapter No. 1, of the American Association of Industrial Physicians and Surgeons, begs leave to report the following nominations: chairman, Dr. Francis D. Patterson, Harrisburg; vice chairman, Dr. J. W. Schereschewsky, Pittsburgh; secretary, Dr. C. A. Lauffer, East Pittsburgh.

Dr. Patterson: You have heard the nominations. Are they seconded and what is your pleasure? All in favor of the election of these officers say "Aye";

contrary minded, "No." It is carried, and I declare these gentlemen elected.

Ever since the epoch-making discovery of antisepsis, physicians, chemists, and pharmacists have been searching for the ideal antiseptic. At the last meeting, we had a history of what had been accomplished abroad by the use of the Carrel-Dakin solution. Now we have a new antiseptic; and this afternoon it will be our pleasure to hear of the work done by Dr. R. P. Cummins, chief surgeon of the Midvale Steel Company of Philadelphia; Capt. William H. Furness of the United States Army Medical Reserve Corps, and Dr. Walter E. Lee of Philadelphia. I will ask Dr. Cummins to present the results of his investigations concerning dichloramin-T. This paper will be illustrated by motion pictures, and will, I am sure, be one of extraordinary interest to all of us.

THE TREATMENT OF INFECTIONS AND INFECTED WOUNDS BY DICHLORAMIN-T

ROBERT PERRY CUMMINS, M.D.
Midvale Steel Company
PHILADELPHIA

The results obtained with the chlorin preparations in the present war as antiseptics have proved conclusively that they stand alone as germicidal agents. It was early found, however, that all of the standard hypochlorite preparations were extremely irritating to the skin if used for any length of time. In order to overcome this irritation, various modifications of the original formulas were tried, the most successful of which was that of Dakin, a very dilute, neutral, Labarraque's solution. This neutral hypochlorite solution was found to have however, three inherent faults: (1) The neutral solution, unlike the Labarraque's with its free alkali, was found to be very unstable and it was necessary to prepare it almost daily. (2) The dilute 48 per cent. solution contained such a very small amount of germicide that it was necessary, in order to obtain a maximum effect, to have the solution at all times in contact with the wound surface. (3) The active chlorin was used up so rapidly when it came in contact with the wound exudate that it was necessary to renew the supply of germicide at least every two hours.

Carrel, Dehelly and DePage overcame these difficulties by developing a most beautiful but complicated technic. With this technic they were able to obtain wonderful results in the treatment of infected wounds.

They have demonstrated unquestionably: (1) That if infected wounds are treated with the same aseptic surgical care that surgeons give to clean wounds, very remarkable results can be obtained. (2) That the primary dressings of infections and infected wounds should be made a formal aseptic operation, in which all devitalized and infected tissue that is practically and anatomically justiable should be removed. (3) That infected wounds so treated can be sterilized if the wound surfaces are constantly bathed with the aqueous hypochlorite solution. (4) That when the wound surfaces are clean (that is, one bacterium to every five microscopic fields on three successive counts made every third day) they may be closed by sutures and union may be expected to take place without infection in about 80 per cent. of cases.

Many have had the privilege of seeing the work done by Carrel and DePage and can personally testify to the accuracy of their claims. But the indifferent success most of us have had, Carrel himself says, is because we fail to grasp and apply the details of technic.

Dakin, realizing the drawbacks of the hypochlorite solution, started a search for a more effective germicide with the following points in mind: (1) That the new antiseptic should be a chlorin compound. (2) That it should be nontoxic. (3) That it should be nonirritating both to the wound surface and the skin. (4) That it should be an antiseptic that would hold its chlorin longer than the hypochlorite and one in which such an elaborate technic would not be necessary for its application.

The one obtained that best fulfilled all requirements was toluene sulphondichloramin, or abbreviated it is known as dichloramin-T (toluene dichloramin). It is a yellowish white crystalline substance, possessing a sweetish, rather pungent chlorous odor. It is stable in the solid state especially when kept in the dark. Water dissolves only traces of it, though it is readily soluble in most organic solvents except paraffin and petroleum. It has an intense germicidal action corresponding to its high content of active chlorin. At the present time the best medium found for it is a mixture of eucalyptol and paraffin oil, both properly chlorinated to reduce the avidity for chlorin.

The preparation is used in strength varying from 5 per cent. to 20 per cent. By using oil as a medium, a large mass of germicide may be brought in direct contact with wound surfaces, and from the fact that the chlorin is given up slowly, we have the distinct advantage of active chlorin in our wounds for eighteen to twenty-four hours, with only one dressing.

It has been estimated that the amount of active chlorin coming in contact constantly with the wound for a period of eighteen to twenty-four hours is equal to that given off during the first seven to fifteen minutes by the hypochlorite solution.

There is a vital necessity when using germicides in the treatment of infections for the earliest possible application of an overwhelming mass of a rapidly acting agent, because infection develops in the tissues at the rate of geometric progression and not by the slow process of addition. Therefore, every minute counts in the end result. Dichloramin-T with a phenol oil coefficient of about fifty can be presented in a larger mass without injury to the tissue cells than any other germicide we have used.

Through the courtesy of Lieutenant Lee we were supplied by the Phipps Institute of the University of Pennsylvania with dichloramin-T and began using it in our dispensary at Midvale in April of this year.

I will not go into the technic as it will be shown to you on the screen far better than I have the faculty of describing it. I would like, however, to invite your attention to a few important factors in regard to its use:

1. The simplicity of technic.

2. That skin irritation will not occur if the wounds are not covered with thick occlusive dressings. This means the use of the smallest amount of dressing material.

3. The decrease in amount of exudate from wounds treated with dichloramin-T makes it possible to use very thin dressing. Lee has estimated in his work at the Pennsylvania Hospital that there has been a saving of 75 per cent. of dressing material. Further, a still greater saving in both time and dressing material is brought about by the rapidity of the individual dressings and the decrease of the total number of dressings required during the period of healing.

At a recent demonstration before the officers of the Medical Reserve Corps of the United States Army at the Pennsylvania Hospital 120 cases were dressed and demonstrated by one surgeon, one nurse, and two orderlies in 75 minutes, 5 c.c. of the oil being used to dress the cases. This gives a cost of the oil per case of 1/30 of 1 cent.

4. We found, in comparing days lost by the injured men during a given period of 1916 with the same period of 1917, that there was a decrease during the time we were using dichloramin-T of 35 per cent.

Gentlemen, think what these two factors alone mean, not only to industry but also to the income of the bread earner.

5. Dichloramin-T, unlike the aqueous hypochlorite, has no effect upon the knots of catgut ligatures and no disintegrating effect upon catgut itself. The occurrence of secondary hemorrhage is not uncommon in the treatment of wounds by the Carrel method. Captain Sweet reports in his 1,200 cases of major infected military wounds that there was not a single secondary hemorrhage.

6. A very strong example of the deodorant effect of dichloramin-T as a dressing is reported by Gordon Saxon from the wards of the Oncological Hospital in Philadelphia, where it is now used routinely as a dressing. Where formerly these putrid, sloughing, malignant tissues were irrigated every two hours with all kinds of deodorant solutions, with little result both as to infection and the offensive odor, now the nurses pack them lightly with gauze saturated with 5 per cent. dichloramin-T every thirty-six hours. Not only has the odor disappeared but the wound infection has been controlled.

We have used dichloramin-T in the treatment of 3,991 cases of industrial wounds.

I have had carefully prepared from our card records, statistics covering a period of four and one-half months from May to September, 1916, when we were using iodin constantly as an antiseptic and compared this with the same period of 1917, at which time we were using dichloramin-T exclusively as an antiseptic, with very interesting results.

During the period of four and one-half months of 1917 we treated 2,359 lacerated wounds of varying degrees. Pus developed in thirty-seven of these wounds, giving a pus percentage of 1.56 per cent. The average time that pus remained in the wounds that did show infection was three and one-half days and their average healing time was eight and eight-ninths days. In comparing with the year 1916 when iodin was used we had a pus percentage of 8.9 per cent., four times as many as with dichloramin-T.

During this period we had 121 punctured wounds treated with dichloramin-T, none of which showed any signs of infection. During 1916 under iodin we had thirty-seven punctured wounds and two developed pus, making a pus percentage of 5.7 per cent., five times as many as with dichloramin-T.

One hundred and four primary sutures were made with dichloramin-T. Pus developed in six, giving a pus percentage of 5.7 per cent. In 1916 with the use of iodin, pus developed in 11.6 per cent. of our primary sutures, twice as many as with dichloramin-T.

I might add that we now sew up wounds that formerly we would not have considered. The infections that have taken place in these primary sutures have all been stitch abscesses, and have cleared up in twenty-four to forty-eight hours by simply removing the stitch and flooding the wound with dichloramin-T.

Forty-one cases came to us infected. After free incision, evacuation of pus and the use of 20 per cent. dichloramin-T pack for twenty-four to forty-eight hours, pus remained in the wounds on an average of two and seven-eighths days and the time lost by these men averaged nine days. We have had but one palmar abscess following hand infection, and in no case have we had to amputate on account of infection. With iodin, the average time of pus remaining in the wound was ten and one-half days, three times as long as with dichloramin-T.

The men seldom make any complaint about pain after the application of dichloramin-T, as you would note when you apply iodin to a wound. On the contrary, we have invariably noted that they all tell us of the comfort of the dressing.

The simplicity of the technic along with the results obtained, make dichloramin-T unquestionably the most practical as well as the best antiseptic we have ever used.

In using dichloramin-T, gentlemen, do not expect it to freely incise your wounds, remove sloughs and devitalized tissue, remove fragments of bone or foreign bodies from your wound, ligate bleeding vessels, etc. Surgery is over 90 per cent. of the treatment of infections and infected wounds. The antiseptic cannot be expected to accomplish more than 10 per cent. of the treatment. *You* must do the surgery, then use dichloramin-T and your results will prove most gratifying.

Dr. Patterson: Now we will have Lieutenant Lee show the motion pictures illustrating the method of application of the antiseptic. I take pleasure in introducing Lieutenant Lee of the Medical Corps of the United States Army.

LANTERN DEMONSTRATION OF THE TREATMENT OF INFECTIONS AND INFECTED WOUNDS WITH DICHLORAMIN-T

CAPT. WALTER ESTELL LEE, M. R. C.
AND
CAPT. WILLIAM H. FURNESS, M. R. C.
PHILADELPHIA

Of the many unexpected phases of the surgical problems of the present war perhaps the most surprising has been the virulence of the infections in the wounds.

The aseptic technic used by the majority of civil surgeons before the war had almost eliminated infection as a factor in the healing of wounds, while, in the treatment of infections, antiseptic agents had been almost abandoned because of their definite interference with the natural processes of repair when used in strengths sufficient to kill bacterial life. Surgical asepsis supplemented at times with alcohol and salt solution was probably the common practice of surgeons in 1914.

The war, however, presented what appeared to be entirely new problems. Those of us who went over early found wounds so massive that one could hardly believe that recovery could take place, and infections so virulent that they appeared (and were for some months) overwhelming. Infection, instead of being negligible, was 75 to 80 per cent. of the surgical problem in these gunshot wounds and for many months it was felt that surgical asepsis alone was entirely inadequate for this fight.

The first reaction of the surgeons to this problem of infection was the extensive use of germicidal agents. With the development of many of the germicides the surgeons unconsciously improved their surgical asepsis and when in the latter part of 1916 many workers were reporting more or less uniform and greatly improved results with many agents, including the various chlorin preparations, Wright's salt solution, quinin, soap and water, ether, and bipp paste, it was found that they all practiced, in addition to the use of their favorite germicide, the extensive excision of the dead and devitalized tissue in the wound area.

Moynihan and Crile, during their recent visit to America, have called attention to the surgical necessity of the removal of this extensive area of devitalized tissue in military wounds and have emphasized the fact that this is undoubtedly of far greater importance in the treatment of these wounds than the use of any antiseptic. The increased virulence of infection in military over civil wounds is probably in direct proportion to this increased area of dead and devitalized tissue which forms ideal culture material for bacterial development. And this increased area in devitalized tissue about the wound is because of the enormous increase in the violence of the trauma in military over that in civil wounds. And it seems reasonable to assume that if it is surgically possible to remove entirely this unusual factor of dead tissue from military wounds, theoretically we should expect the tissues to heal as they do in civil surgery. This at least is the hope which Moynihan and Crile place before us and in a certain proportion of cases they have actually demonstrated this possibility.

We feel perfectly sure, after two years' experience with military wounds, that no antiseptic can take the place of surgery; that one must first excise the foci of infection, removing all foreign bodies that may be present, as well as the devitalized tissue. This must not only be removed, but must be excised beyond the point of the reparative work that you expect to do. If this excision can be perfectly done, mechanically and anatomically, within four to six hours after the receipt of the injury, you will be surprised how many wounds will heal when sutured tightly, without drainage and without the use of any antiseptic. That, of course, is possible in only a small proportion of the cases, 10 or 15 per cent. In a large proportion of them, you must use, in addition to surgery, some antiseptic.

Now the antiseptic that we have been experimenting with in Philadelphia is nothing new. It was made in 1905 by Chataway. It adds nothing new to the theory of antiseptics, as outlined by Dakin. It is simply an attempt to develop the hypochlorite treatment, first, by eliminating the skin irritation which it produces; and, secondly, by getting rid of the necessity for the complicated hydraulic system that Carrel developed for use in employing this weak and unstable solution; and, thirdly, to get rid of the time-consuming factors that are necessary in the use of that method. If you have the time, the equipment, etc., to practice the Carrel technic, there is nothing better.

Now we will have the moving picture, and I think that you can see how we are trying to eliminate these difficulties. Dr. Cummins gave you the figures. Our total number of cases is 7,500, representing nine months' work here in America; and over five months' work with 1,200 cases of military major wounds in the British Army. (Motion pictures being shown.)

Dichloramin-T is a crystalline substance, when made with chloroform; and when made in a vacuum, it is a powder. The commercial dichloramin is now made, of course, in the less expensive way; and we have it usually in the powder form. It is not only soluble in chloroform, but also in ether, acetone and most essential oils, all of which, however, are impractical as solvents when it is to be applied to surgical wounds. Dichloramin is soluble in chlorinated oil, if it is slowly shaken for half an hour. This little trick of adding a few drops of chloroform makes it immediately soluble, just making a thick paste.

Now, there are three enemies, sunlight, water, and alcohol, all of which decompose chloramin. You should keep it in dark amber glass bottles, not blue ones; because blue, very curiously, filters through the very rays that are necessary to decompose dichloramin.

Now we come to the treatment of the infections. Using a palmar abscess for the demonstration, we first make a wide, clean incision, if possible, excising all of the infected tissue. Then a simple application of the solution is made with some glass object. Do not put a glass pipette that has been boiled into your stock bottle. You may think that this is unnecessary advice; but we have found frequently in hospitals that decomposition has been due to placing a boiled pipette into the container. This introduced enough water to decompose the solution.

After the oil has been introduced, put in a piece of gauze saturated with the dichloramin, which is to act, not as a drain, but as a dilator and to keep the wound edges apart. It is very necessary to use light dressings, as heavy dressings rob the wound of the oil. They, further, supply heat and cause maceration and increase discharge. This little light dressing can be used three or four times, and costs but half a cent.

This introduces the treatment of the ambulatory cases in a surgical dispensary. By dividing the work into three divisions it has been found that the labor has been not only simplified but greatly lessened. This is the room in which the patients remove their bandages, not their dressings; second, the dressing room in which the surgeon removes the dressings and dresses the wound with a forcep technic; third, a room in which the assistants apply the bandages. With such a system, one surgeon, one nurse and two orderlies can easily dress sixty patients an hour.

This is the table. We have a very simple equipment. The gauze that you see there will dress one hundred ambulatory cases. The reason that we are able to dress so rapidly is simply a problem in efficiency. Each man does the same thing through the whole process. This dispensary treatment is entirely with forceps. The wounds are never touched, except by the surgeon, whose hands are gloved. The oil in this case is being introduced with a wooden, cotton-tipped applicator, which is immediately discarded.

The man now passes into the third room, and has a light bandage applied. If a bandage is used, only one thickness of gauze is applied. If we anticipate the possibility of a secondary closure, bacterial counts are made.

Here we have tried to compare the dressings used in the ordinary treatment of a palmar abscess with those required by this method. Assuming that a palmar abscess would heal in ten days, all the dressings to the left are what we would use in the ten days' treatment by the old method. The others are what we would use in ten days in treatment with dichloramin.

This boy removing his dressings has an osteomyelitis of the lower end of the leg, pretty well filled in and the skin edges closing. There is only one layer of dressing. The surface is being sprayed with the oil.

This is an extensive osteomyelitis of the lower end of the tibia. That is the amount of discharge in twenty-four hours. Mopping it out of the depth of the cavity, you can see the size of that wound. With a lacing dressing, the application can be made with the forceps. One of these bands pulled off with removal of the dressing. Then he goes into the next room, where the assistant puts on another lacing dressing.

The making of these dressings is perfectly simple. The materials that a shoemaker employs in putting hooks into the uppers of shoes are used, a punch and ordinary adhesive two or three inches wide. Fold over the edge twice. This process is very slow in the picture, but can be accomplished in two or three minutes. Of course, at the dispensary, these dressings are made up ahead of time. When you realize that they last two or three days, the time expended seems very little. The lacing can be either a continuous piece, or we can cut a long elastic band and make a loop at one end for a smaller band to go through. One turn of the bandage, with a slight overlapping of an inch and a half, is sufficient. The adhesive is not put on the skin. It is put on the bandage. In that way, you can get compression and draw the edges of the wound together.

I think you can understand from this how we can dress so many wounds in so short a time. The school of Medical Reserve Corps officers now in Philadelphia visited our dispensary yesterday. Three different men did the dressings. They had never dressed in this way before, but had watched us for two or three days. These men, allowing for time in changing gloves and gowns, did one hundred and twenty-five dressings in seventy-five minutes at the first attempt. There is absolutely nothing to it. It is so simple that it does not seem true. There is nothing new. It is simply aseptic surgery made possible by an antiseptic that is very simple to apply and more efficient than anything else that we have ever used.

Now for the treatment of a lacerated wound. The skin has been cleaned previous to this stage of the operation. A wide incision, a quarter or half of an inch beyond the wound edge, is made. That first incision should be outlined on the skin. Next comes the removal of the foreign bodies. Even after so many months of work in our own hospital, we had a man sent over last week with a splinter one inch long and a nice piece of cement buried among his tendons.

Do not place an excessive amount of oil in the wound. This is at least ten times as strong as pure carbolic acid. One observer reported bad results with 73 c.c. into a wound in the abdominal wall. Then, after six or seven days, when the oil began to escape, he said that he thought that it had proved irritating to the tissues.

Close your dead spaces, as you always do in surgery; and have no fear about the catgut's disintegrating because of the action of the dichloramin. I have had a piece of catgut in dichloramin for two months. It is brittle, but its tensile strength is the same as when it was introduced. At the present time we are sterilizing our catgut with dichloramin.

That glass atomizer has been the most practical that we have found so far. Rubber is sometimes affected by the solution, particularly the poor grades of rubber.

Now we will again show you the dispensary. Do not look at the wounds so much as at the table, and see how simple the technic is and the few things that you can get along with. We have eight forceps, four scissors, and four grooved directors.

This is a twenty-four hours' dressing being removed from a lacerated wound in the forearm. The forceps are removed from tray No. 1 and when soiled put on tray No. 2. When dirty, the nurse immediately puts them in to boil.

This man is going from the dressing to the bandage room.

This is a large lacerated wound of the foot, which it was impossible to close. In fact, it was twenty-four hours before it came to the hospital. In a large surface like that, paraffin gauze is used to prevent sticking.

Now for the large wound. This is a compound fracture caused by a bullet. The treatment is not different from that advised by all military surgeons, a wide excision of the wound of entrance; deepening of the wound to the seat of fracture; removal of all loose foreign bodies. Do not remove pieces of bone with periosteal attachments. Now, the application of this solution to deep cavities is perfectly practicable, I assure you, with a simple glass syringe, on which we put a little glass tip.

This is the wound of entrance again. Feeling that it was impossible to remove all the devitalized tissue, we put in a slight drain. Devitalization in gunshot wounds is due to internal explosion. This is quite different from industrial wounds.

Here is the wound of exit. Wide excision; removal of the loose fragments; testing of the others, exploring every surface of that wound for the application of the oil.

Now for the dressings. Even in a wound of that size, four to six layers of gauze only are applied. Yes, it will become moist and wet; and during the first twenty-four hours you may have to change it three or four times. In putting on the dressing, you can use towels and safety pins. It is more economical and very much quicker to use them than bandage. We have learned that abroad.

This is the splint adopted as official by the United States Army, the Thomas splint with Buck's extension, for both upper and lower extremities. Now Captain Sweet reports that very rarely, in these compound wounds, is it necessary to dress more than once in every twenty-four hours. His average time for dressing a ward of 180 is three minutes per wound; and that is his average time for about five months.

The results of the use of this method in burns have been very gratifying. All it does, of course, is to sterilize the surface. The difficulty at first was that the gauze stuck to these burned surfaces; and when it was removed, it caused bleeding. Then, when fresh gauze was applied, there was clogging of the meshes. By the use of paraffin and mosquito netting, the dressing can be removed without producing bleeding; and by using wide-meshed net, you can spray the oil through into the burned surface.

Here is a burn of the arm and a portion of the forearm. That paraffined meshed gauze was put on seven days before the picture was taken, and never changed; and in each case sprayed with the oil you see there. The wound, in seven days, is quite dry. I saw this man three days ago, four weeks after the injury; and he has only three little areas one-half inch in diameter in that burn that have not healed.

Dr. Patterson: I know that this subject is of such extreme interest to all of us that much can be said in the way of discussion; but before discussing it I feel that we should have the privilege of hearing a man who has been on the firing line in the trenches in the fight for better public health for many years. I refer to Dr. William Evans of Chicago, past president of the American Public Health Association, who will speak to us on the subject of "The War Crisis and the Industrial Surgeon."

THE WAR CRISIS AND THE INDUSTRIAL SURGEON

W. A. EVANS, M.D., D.P.H.
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The American Public Health Association has been twice called on since the entrance of the United States into the war. They were asked to ascertain the training and experience of their members for medico-military service. This information having been gathered, was placed at the disposal of the Surgeon-General of the Army and the medical member of the Advisory Council of National Defense. I am informed that this data is being made use of daily. A very considerable number of its members are now on duty at the front or in foreign lands and many others are supplementing their training in hygiene by military training.

They were asked to furnish a group of committees to report methods of conserving the health of laborers employed in the industries. Fifteen such committees were appointed, one of which was eventually transferred. The fourteen committee reports have been virtually completed and have been offered or will shortly be offered to the Department of Labor for publication as bulletins.

I learn that the industrial physicians have held a meeting with the medical section of the Advisory Council of National Defense and that a plan for the best possible division of the industrial physicians between military and civilian service is being worked out. The theory on which such a division should proceed is that physicians who have had training in the service of large industrial establishments are needed in both military and civil life.

The physician practicing ordinary curative medicine and surgery has much to learn when he undertakes military work. In his work as a private physician both he and his patient have had the individualistic point of view. He knows very little hygiene, sanitation, preventive medicine. He is a poor record keeper.

The industrial physician has been trained in group methods. He knows the fundamentals of what the military man calls book work. He has had training in first-aid work and the care of wounds. He knows what it is to take orders and obey them and to give orders and see that they are obeyed. We can readily understand why the military men should forage for recruits in the field of industrial medicine.

On the other hand, the necessities of war times require a larger number of medical men for service in the industries than are used during times of peace.

The natural tendency of those back of the lines and of the country at large in the years subsequent to war times is toward laxity and inefficiency. If, subsequent to this war, we follow the precedents of previous wars, or if we follow our natural inclinations, there will be years of individualism, private initiative, lack of public conscience, and general laxity. For illustration, let us turn to the history of the United States in 1865-1875. For four years the nation had been tense with effort, its men had been under military discipline, there had been a degree of group action for which we were not psychologically nor socially prepared. The war ended. The pendulum swung back. The men who had been fed up on saving the Union would work for themselves for awhile. There ensued ten years of robbery, stealing, and public and private debauchery.

Our hope is that we have learned, during the last half century, that we have grown in social conscience. In addition, the war will not lay the specter of the efficiently organized German society as an after-the-war competitor. We have ground for hoping that, as Kenwood says, some of the capacity for organization to destroy life during this war may carry over into organization to conserve life subsequent to it. We have ground for hoping that some of the organization in all social lines which we have developed under the kinetic drive of the fundamental emotions, hate, anger, fear, etc., we may continue after the war under the stimulus of cold logic, reason, and common sense.

The only reason for referring to what is likely to happen after the war is for its bearing on what is happening and what will happen during the war. The natural tendency of the population behind the lines during war is toward inefficiency. Many are under the stimulus of the kinetic drive of the fundamental emotions. This does not make for efficiency or for prolonged effort. Precedents show that a nation passing through years of war is in a period of governmental, civil, and industrial stagnation.

But this war is different in that for its purposes it is known to be necessary that every arm of society must function at highest efficiency. From the president of the United States to the humblest hunkey, an exceptional state of efficiency must be reached and maintained.

Congressman Medill McCormick, freshly returned from the Western front, says, "The issues of the war will be decided not on the Isonzo or on the Plave, not on the Meuse or the Rhine, but in Washington and by the furnaces of America."

If this is a statement of fact, then, as a part of our duty in this war crisis, there must be an increase in the number of industrial physicians and an increase in the field of industrial medicine.

Nearly 2 per cent. of our entire population have been withdrawn from civil life. Practically all of these have been drawn from the group of males between 21 and 31 years of age —the most efficient workers at the furnaces. The indications are that within a short while this will be increased to 5 per cent., almost all from the most efficient group in civil life. Another percentage will be drawn to make up for those killed, dead from disease, and invalided for various reasons. For nearly four years immigration has been light and emigration heavy. For two years the almost a million a year excess of immigrants over emigrants has fallen to 1,000 in two years. The annual increment to population from immigration of 1 per cent. a year has not held for two years and was greatly lessened in one other year.

The problem of increased production with a greatly diminished labor supply will prove a difficult one. Much of the solution of this problem must come from the industrial physician. In the main, the labor shortage in the necessary industries will be met by tapping unused sources of supply. Women will enter work away from home as never before. Various idle classes will be employed. Certain industries will stagnate and their surplus of workers will be transferred to those industries that are called on for overproduction.

This labor, more than the usual labor of these industries, will need the protection of industrial medicine. Left to themselves, their accident rates will be high, since they will be working at unaccustomed jobs and with unaccustomed machines. They will not know how to protect themselves against the industrial poisons or the occupational diseases of their new work. Many of them will be working in organized industry for the first time, and they will carry to their new work the individualism of the farm. Many of them will be unfitted in muscular development, bony framework, organically, in weight, wind, endurance, or temperamentally, for the work they are attempting to do.

All of these considerations mean that increased work will be thrown on the industrial physicians. Factories and industries which hitherto have been able to do very well on a *laissez faire* policy cannot continue an increased output with a labor shortage for more than a few months, except they make use of industrial medicine.

Certain processes which in times past we have allowed to drift on and certain wrong policies which we have countenanced because competition was not keen, we must now make over so that they conform to the new requirement.

We must frankly acknowledge that we have "scrapped" men. It was cheaper to do so when eastern and southern Europe furnished an unlimited supply. The same clear, cold logic shows that "scrapping" men when the supply is scant and must remain so for several years is inadvisable.

Briefly, what are some of the methods that must be employed? All industries called on for increased productiveness with an abnormally small labor supply must have a medical department or must share in a medical department. All employees must be periodically examined. Fitness for jobs must be in part determined by the medical department. Labor turnover must be accurately recorded. All excessive labor turnover must be investigated as to cause and the condition remedied. Absenteeism must be accurately known and excessive absenteeism must be investigated as to causes and remedies.

The questions of individual and group productiveness must be accurately determined and the reasons for productiveness below the norm must be recognized and remedied. Fatigue must be investigated and remediable conditions remedied. The fitness of large groups, for examples, women, minors, the old, cripples for certain employments, must be determined.

To prophesy a doubling of the demand for social workers, nurses, helpers, industrial physicians and surgeons and directors as a part of the war crisis is to be conservative.

Obviously, not many of those now engaged in the work of industrial medicine can be spared or should be spared to the military. The civilian physicians can soon acquire those capacities in which he is now relatively deficient —book work, the art of treating injuries and first-aid work generally, the duties of the part of the machine to the machine as a whole. In a few months he can learn group medicine and pick up some knowledge of public hygiene.

A few industrial physicians will be required for large military industrial establishments here and abroad. Such are shipyards, government munition works and arsenals, and government repair shops for engines of war. But the majority of the industrial physicians can better serve their country by doing well the jobs in connection with industrial plants.

As a part of the war crisis, medical, dental, and nurses' schools should teach industrial medicine.

Dr. Patterson: We certainly are indebted to Dr. Evans for this wonderful address, the discussion of which will be opened by Dr. Otto P. Geier of the Cincinnati Milling Machine Company, Cincinnati, Ohio.

DISCUSSION

Dr. Otto P. Geier, Cincinnati Milling Machine Co., Cincinnati, Ohio: I would be a foolhardy man if I attempted, after a day of such splendid discussion, to point out the position that the industrial physician holds today. I cannot, however, let this opportunity go by without saying how much I appreciate the chance of coming here to this splendid conference; how much the country owes to this group of men for really showing us what the industrial physician can do for his country.

It also would be very hazardous should I attempt to comment very much on Dr. Evans' splendid paper. I have been impressed with the fact that a public health physician rarely is well informed as to occupational diseases and hazards. Within a period of six months, coming closely in contact with the committee of industrial physicians who are working under him to establish industrial health standards for the Council of National Defense, Dr. Evans is able to come here today and set forth industrial medicine in a way that most of us directly engaged in the work must wonder at—the fact he has pointed out most splendidly that industrial medicine has come into being and is more nearly meeting the war crisis medically than any other system could possibly have done. He has given new dignity to the industrial physician.

To some of us in this field of work, it has seemed that the public health officers and the medical profession generally know little about this tremendous field of effort and the wonderful contribution that it might well make toward public health. I feel, as you all do, that the industrial physician can be, perhaps, the most forceful arm of the Health Department of the future and contribute broadly to the welfare of the nation.

Dr. Evans has spoken of the attitude of the government toward the industrial physician just at this time. There are men searching the records of the industrial physicians to see which of them may be spared for war service. He has stated better than I could how careful the government should be before conscripting men from this work. I am sure that his position in relation to this problem will do much to protect the splendid work that is being carried on by the industrial physicians as a war measure, from disruption. Never in the history of the world has life been held so cheap, nor yet so dear—cheap at the front and dear at home. The war will finally be won by the industrial army. This brings new duties on the industrial physician. He must properly interpret that work and properly do his work.

Those of us who have listened to these addresses will go home with a new feeling of responsibility toward this work. We are bound to interpret the medical profession to the management of great industries. No one can do this so well as the industrial physician. As Dr. Hamilton has said, we can teach the working men the true value of good health. We also can teach men that the possession of good health is a patriotic duty. We should also teach the employer his duty toward the subject of public health, and thereby help him incidentally to work out his labor problem.

It is the industrial physician's particular duty to teach the medical profession that society must be reorganized along industrial lines. He can also show how to humanize the practice of medicine and make it efficient as it has never been before.

Finally, the industrial physician must interpret to the public and the government the value of industrial medicine. Out of every great conflict must come some compensating feature. Perhaps the war will serve to socialize medicine to make it more effective. As I have thought of this great war and the part industry must play to supply the means of war, it has seemed to me that the industrial physicians working in the great human laboratories, should be the ones to bring forward a plan for a reorganized profession, a centralization and nationalization of effort, to the end that not only the medical problems that lie immediately before us and our Allies, but also the medical problems of peace times be solved.

Dr. Patterson: I feel that this meeting has been one of the most successful that we have ever had. Before we go on to the discussion of the papers of Drs. Cummins and Lee and our adjournment, I am going to ask Major Bloodgood, our good friend from Baltimore, who needs no introduction to the physicians of this country, to say a word.

MEDICAL PREPAREDNESS AND MEDICAL AND SURGICAL PROBLEMS IN THIS WAR

MAJOR JOSEPH C. BLOODGOOD, M.R.C., U.S.A.
BALTIMORE, MD.

At home, it should be chiefly preventive medicine and sanitation. When our army is in France, or elsewhere, the great medical problem is surgery.

At home, federal, state, city, and county health departments and the medical departments of the industries must combine and coordinate their activities to protect the entire population and all the industrial workers from disease, and so release more physicians for the army. If these health departments are given the means and the authority, the number of cases of disease will be so greatly reduced that many physicians and surgeons would have little or nothing to do, and if there were no war demanding their services, they would be forced into other occupations anyway.

In the army, sanitation and preventive medicine is largely in control of everything, even venereal diseases and alcohol can be and are controlled in those places where public sentiment and civic authority permit the enforcement of existing regulations for the zones outside the camps, for example, at Camp Greenleaf, Fort Oglethorpe, Ga.

At the front, the great, as yet, unsolved problems in preventive medicine have to do with the extermination of body vermin and rats in the trenches.

The great medical problem in this war is wound treatment. Victory cannot be won without wounds. These wounds must be healed. When a soldier falls, his life, his present and future comfort, happiness and usefulness, are in the hands of the medical and nursing professions. The wounded soldier must be so treated that he either returns to the front fit to fight, or home fit to work.

Peace surgery must give way to war surgery. If anyone must suffer, it must not be the men fighting our battles and preserving the life of the nation. Soldiers in immense numbers are required to win this war, and we must have specially trained physicians, surgeons, and nurses to care for them. Should the medical profession volunteer *en masse* and so draft themselves, it will be enforcing an example on the industrial workers who are asked to forge the guns and build the ships. Ships are essential for the transportation of the republic's great army and all the things that must accompany this army. These men must not be allowed to land in France without guns of sufficient caliber to protect them, and without numberless eyes in the air to guide the army and its guns.

Ruthless war is a threatening world disease. When ruthless war wins, liberty and all that liberty-loving people cherish for themselves and posterity, and for the world, is replaced by slavery. Centuries of effort to give liberty to the world are lost. Oppressed peoples must again begin the long struggle. Never before has one group of people faced such a catastrophe of total destruction by another group. Which type of people shall prevail? The result is practically in the hands of liberty-loving free America.

In the standardization of hospitals about to be begun in the United States, the question to be asked and solved is: What is best for the patient? This problem cannot be solved unless we have a sufficient record in the hospitals and a follow-up system.

In war efficiency, the question is: What is best for the soldier?

In the special training of a civil physician or surgeon for military duty, he first must have a degree from a recognized medical school. Then he must pass the physical tests. Now he is a candidate for commission. Every officer commissioned in the Medical Reserve Corps should start with this physical fitness. The first requirement, however, is a spirit generated by belief in the cause of the war and the urgent necessity of the hour. The spirit leads to volunteering of service.

The commissioned candidate is now ready for the special training in his military and medico-military duty. At the onset there are two large groups of classes: One group is trained for duty in the zone of advance from a regimental medical officer to the evacuation hospital. In this group the age should be 45 years or less. The physical requirements are greatest. The second group are trained for the evacuation, base, and home hospitals. Here the age of many may be between 45 and 55. The physical requirements are less.

In the zone of advance, purely military and medico-military requirements are greatest with the regimental officer and least in the evacuation hospital, while purely clinical requirements are least on the firing line and grow greater and should be of the highest degree in the evacuation hospital.

Each civil physician or surgeon who enters the Medical Reserve Corps starts with a varying degree of purely clinical knowledge and experience. Few, if any, have had military training. Every candidate, if possible, should have a certain amount of special teaching in the military and medico military duties of the army. Those finally selected for the zone of advance receive further training in their special military, medico-military, and purely clinical requirements. Those selected for duty in the evacuation hospitals and the zone of the interior to the home hospitals, should have further intensive instruction in purely clinical work, which this war has demonstrated to be different, in sanitation, medicine, and surgery, from the requirements in practice at home in time of peace.

Much of this training in military, medico-military and clinical work in sanitation, medicine, and surgery should be done in this country in the officers' training camps, in the great cantonments and in the other training camps, and in the special postgraduate schools which have been established.

The officers' training camps have been running in their full capacity at Forts Riley, Benjamin Harrison and Oglethorpe. The training camp Greenleaf at Fort Oglethorpe will probably be greatly enlarged. Special postgraduate courses have been established in orthopedic surgery, radiology, neurologic surgery, oral plastic surgery, fractures, the Carrel-Dakin method of treatment of infected wounds, the treatment with chloramin-T; a school of hygiene and sanitation has been established at Fort Oglethorpe; special laboratory courses are being established. These special courses in purely clinical work in the different specialties have not only been organized in the medical departments of great universities, but in connection with the base hospitals in all cantonments. The Surgeon-Generals of the Army, Navy, and Public Health Service, all recognize this necessity. No member of the Medical Reserve Corps should for a moment conclude, no matter how high his position in the surgical world, that he is ready to meet the purely clinical problems of military medicine and surgery without some intensive instructions in the special problems.

Military and medico-military training begin a medical officers' training camp. Every candidate should at least apply for this training. The training is continued in other camps. Some officers unfortunately must get it there without the preliminary course in the medical officers' training camps.

From the firing line to the home hospital there are at least four important stages, each with its special problems. In the first stage, on the firing line, the wounded are collected and receive a primary dressing and a primary fixation. The problems here are of efficient, rapid fixation to allow transportation on a stretcher. This is a combined military and clinical problem. The second stage is one of transportation, and the problem is chiefly military. The third stage is the evacuation hospital, and the problem is wound treatment. The fourth stage is the base and home hospital, and the problem is chiefly reconstruction and reeducation.

On the firing line there may not be much to be done beyond the primary dressing and the primary fixation, but what little should be done, must be done by the regimental surgeon and medical corps and is the foundation of a surgical treatment which ultimately makes the man return to the front fit to fight, or return home fit to work.

There is no agreement as to the value of an antiseptic in the primary dressing. It may be of value in wounds of lesser degree, but in the huge shell wounds at the present time it seems useless and a waste of precious minutes to attempt any disinfection. The wound should be simply covered with gauze.

The most important and difficult procedure is the primary fixation in splints or on a stretcher for transportation. In view of the number of the wounded this primary fixation must not only be accomplished with great efficiency, but rapidly. The Allen method of fixation with extension on the army stretcher without splints appeals to me as the best. This will be published shortly in the *Military Surgeon*.

However, we should not cease to dream, or stop in our search for a method of disinfecting the huge shell wound at the primary dressing. If we could find an antiseptic or a serum which would prolong the stage of contamination and put off the stage of infection it would be an epoch-making discovery.

All agree that the best results are obtained when a wounded soldier is brought in contact with a well-trained surgical team in a fully-equipped hospital in the best condition and in the shortest space of time. I am emphasizing the *best condition* and the *shortest space of time.* The best condition is in the control of the regimental surgeon and his enlisted medical corps men. It depends upon the rapid collection of the wounded, and the rapid and efficient primary fixation in splints or on the stretcher. The shortest space of time is in the hands of the ambulance company. This transportation should be made with the least number of transfers and, if possible, with no redressing, no change of the splints, and no change from the stretcher. During transportation, shock, if possible, should be prevented or treated.

The majority of wounded should be transported directly from the regimental aid post to the evacuation hospital. The problem of selecting the lesser wounded who can be treated at the dressing station between the firing line and evacuation hospital is not a difficult one.

All agree that the majority of wounded soldiers in this war should be operated on in a well equipped hospital under anesthesia within eight hours, whenever possible. This hospital as a rule can be placed from six to eight miles in the rear.

In trench warfare, when the firing line is more or less stationary, this hospital six or eight miles to the rear becomes a stationary hospital. It may then be called a base or evacuation hospital. As a rule it is the latter. However, when the firing line advances rapidly, these huge stationary hospitals cannot be moved with the same rapidity, and for this reason we must be prepared with a mobile hospital which can be kept within six or eight miles in the rear and which is equipped with all that is necessary for this primary operation.

In this war the field hospital which is mobile will have little to do except in the care of minor wounds, if the firing line is stationary, but if the firing line advances rapidly, it will have much to do and its equipment will have to be changed. Our present evacuation hospital was not designed for this primary operation, nor for the after-care of a large number of patients. If the firing line is stationary this evacuation hospital will have to be enlarged to meet demands, and as the firing line advances, the evacuation hospital should be ready with its automobiles to become on twenty-four hours' notice a large, mobile operating unit.

All authorities agree that in the great majority of cases when the wounded soldiers reach the evacuation hospital in eight hours or less, and the character of the wound allows, the wound should be excised, not only to remove the blood clot and foreign body, but to cut out with the knife, as you would in malignant diseases, all devitalized tissue. Then the wound may be closed with a large probability of healing.

This requirement places huge responsibilities and demands on the regimental medical corps and on the ambulance transportation service—

largely a military problem. The excision of such a wound places on the surgical team in the evacuation hospital a new problem. The number of wounded may be great, the character of each wound different. Not only must there be surgical technic and skill, but surgical judgment. To facilitate the complete excision of such an irregular wound, some British surgeons stain the surface with brilliant green, others char with the cautery. All agree, however, that no surgeon should depend on an antiseptic alone. The devitalized tissue must be excised.

When the wounded soldier fails to reach the evacuation hospital in time and the wound has passed from the stage of contamination to the stage of infection, the wound cannot be closed. There also seems to be some difference of opinion as to whether the wound in the stage of infection should be excised. The majority favor thorough cleansing and removal of all foreign bodies and blood clots. In other cases the wounded soldier arrives within the time with the wound in the stage of contamination, but on account of its extent and character the devitalized tissue cannot all be excised. These wounds must be left open.

However, as to the treatment of the open wound there is a wide disagreement. Two methods of treatment of the open wound are being intensely studied and advocated in this country, one, the Carrel-Dakin treatment; the other, the dichloramin-T treatment.

The majority of the opponents of the Carrel method do not question the scientific precision of its technic, nor the accuracy and brilliancy of its results. They claim, however, that this technic can be followed successfully only in a stationary hospital with a large personnel, and that it is difficult to teach large numbers of surgeons the detail of this method. They claim also that it is more expensive not only in personnel, but in material. They call attention to the difficulty not only of placing the tubes properly, but in keeping them patent, and the difficulty of preparing and keeping the hypochlorite solution at effective strength.

In Philadelphia at the Pennsylvania and University hospitals the treatment of open wounds by the chloramin-T method has been splendidly worked out in dispensary and ward practice. The motion-picture lecture which is being delivered in this country by Captain Furness and Lieutenant Lee is a marvelously pictured story.

The men in this group are playing the game fairly and admit that it was the Carrel-Dakin method that led to this.

The technic which they have developed in the excision of the wound and in the redressing of the wound ranks with Carrel's. The only difference is in the application of the antiseptic. The open wound before and after its excision and at the daily redressings is sprayed and sponged with the dichloramin-T, the active principle of which is chlorin in eucalyptus oil. It differs from the Carrel method in the elimination of all drainage tubes, and the twenty-four-hour application of the antiseptic instead of the two-hour.

The tests of these treatments will not be in the lesser wounds of the type usually seen in industrial practice. As a matter of fact the results without dichloramin-T and without the Carrel-Dakin have been uniformly good in these lesser wounds of industrial practice, when surgical skill, technic and judgment were good. But the shell wounds of this war are of a different type, and Carrel has made a great contribution to their treatment. It is true that we have reports from France that dichloramin-T is accomplishing excellent results.

The lesson, however, which we must learn and which was recently brought to us by Sir Moynihan and Major Crile, is that the surgeons must not depend solely on any yet known antiseptic, but must be convinced that their results will depend on aseptic technic, rapid skilful technic, surgical judgment, resourcefulness, constant attention to detail at the operation, and eternal vigilance in the after-treatment. The majority of surgeons, however, feel that some antiseptic is an essential part of the wound treatment at the primary operation and in the subsequent dressings of the open wound.

In all surgical diseases the interval of time between the onset of the local condition and its operative treatment is the first essential factor in the cure. In this war many wounded soldiers will not reach the evacuation hospital within eight hours with wounds still in the stage of contamination only, and many of those who do will have wounds that cannot be completely excised and closed. Therefore, there is required a treatment for the open wound and as far as my personal observation goes, I do not as yet know of a substitute for the Carrel-Dakin method.

It is my personal opinion that no surgeon in this country, no matter what his position or standing, has the right to condemn the Carrel-Dakin method, unless he has, through painstaking investigation and experience, devised a substitute. Such men as these can fairly be compared with those in this country who in one way or another obstruct our preparation for war and have no substitute to offer which will bring about a peace with victory.

The work of the group in Philadelphia with dichloramin-T should be welcomed and encouraged. The Surgeon-General has recognized it, as he has Carrel's method, by sending Medical Reserve Corps officers to both places for special instruction. Other clinics in this country should follow the example of the Philadelphia group and immediately start, in wards and dispensaries, an investigation, either comparative of these two methods, or of a new one.

The surgical departments of the great industries should follow the example of Sherman of Pittsburgh and Nolan of Birmingham. The industries with the large number of accidental wounds are in the best position to start at once a thorough and scientific research into the problems of wound treatment.

The fourth zone or stage begins at the evacuation hospital and extends to the home hospital. When the wounded soldier cannot be returned to the firing line fit to fight, he should be returned home fit to work. The great problem here is one of reconstruction and reeducation. It is largely an orthopedic problem. But orthopedic principles should be known and followed by the regimental surgeon in his primary fixation in splints or on the stretcher. Throughout the treatment the alignment of the broken bones, the proper position of the injured extremity should be constantly maintained. From the beginning, muscle, tendon, joint, and nerve function should be maintained and restored as rapidly as possible. Reconstruction can be made a much less difficult problem, if surgery is good from the onset. The larger problems are orthopedic and wound treatment. Undoubtedly this war will show a tremendous change for improvement when experienced and well-trained specialists have charge of the head, chest, and abdominal wounds at the primary operation.

All agree that after the primary operation there must be a period of rest in bed before there is a second transportation.

In military medicine and surgery one group of medical men will have chiefly military and administrative functions, another group of specialists and assistants will be chiefly occupied with purely clinical work, a third group, especially in the zone of advance, will have combined military and clinical duties. All must have a certain amount of general training in the military side, all need some general training in the clinical aspects, others are further and specially trained for the more difficult duties of military administration and supervision and for the greater demands of clinical responsibility in surgery, sanitation, and medicine. There must be overlapping, and there will be failure if there is not coordination, teamwork and *esprit de corps*. The medical profession of this country must realize its responsibilities. The winning of the war depends on its combined and coordinated action as much as on any other department of the army.

Now is the time to volunteer, to find out whether you are physically fit, whether you have the requirements, and whether your services are needed most at home or with the army. All who volunteer their services, whether accepted and commissioned for duty or not, should receive some insignia of honor.

I should like to read to this conference the following letter:

Nov. 11, 1917.

Memorandum: The problem of Reconstruction and Reeducation of United States Soldiers crippled during the present war.

From Joseph Colt Bloodgood, chairman of Committee on Preparedness, Southern Medical Association.

To Physicians and Surgeons in Industrial Practice:

I have received a large number of answers to the letters sent out dated Sept. 10, 1917. These letters and personal conversation with physicians and surgeons in industrial practice seem to demonstrate that the number of cripples who need reconstruction and reeducation is relatively so small that even in large industries it has not been considered of sufficient importance to develop the problem as will have to be done with the soldiers crippled in this war.

The Surgeon-General and the department under Major Edgar King is preparing for the proper reconstruction and reeducation of the crippled soldiers, but when this is accomplished, employment of some kind must be found for the soldier on his discharge or the whole scheme fails.

The government naturally must not only depend on help in the reeducation and reconstruction, on specially trained and qualified Medical Reserve Corps Officers, but on the employers of labor in the great industries of this country, to find a job for which the crippled soldier has been reeducated and reconstructed.

It is my personal opinion that the problem is too large a one for any single industry to solve alone. The industries should combine as the railroads have combined in the settling of this very important war problem.

Although at the present time it is perhaps one of the most difficult problems of the war, it is at the same time a peace problem.

In all the industries there must be many cripples, in time of peace, who need reconstruction and reeducation. For this reason, if the employers of labor coordinate with the government now for the solution of this problem, they will establish and develop a scheme which can be utilized for the crippled men in industry in time of peace.

There is no doubt that "safety first" has reduced the number of accidents. The improvement of first-aid and its instruction and the medical departments of the industries have greatly improved the results, but the question of reeducation, especially for a better job, has not received the same consideration.

Please discuss this among yourselves and with the officers of your Company, and offer your combined advice and aid to the Surgeon-General of the United States Army and Navy.

Very sincerely yours,
Joseph Colt Bloodgood.

Dr. Patterson: I am going to ask Dr. A. W. Colcord of the Carnegie Steel Company of Clairton to say a word on antisepsis.

DISCUSSION

Dr. A. W. Colcord, Carnegie Steel Company, Clairton: After the paper we have had from Dr. Cummins, I feel that if the new treatment with dichloramin-T does nothing but displace the old iodin treatment, it will have been worth while. The figures that Dr. Cummins gave us, 15 per cent. of infected wounds under the iodin treatment, are startling. I must say that I have never been guilty of employing that method of treatment in connection with wounds. I am glad to be able to say this, and to see this method go out of use. I felt that it had no place, except in some emergency.

During the last year, I have been using chloramin-T, and I feel, as others have expressed themselves in regard to it, that the Carrel-Dakin treatment has its best place in patients with wounds that must be treated in bed. My best success has been with these cases. In ambulatory cases, I feel that it has been a failure. A man cannot be cured by the use of the Carrel-Dakin solution.

In using the dichloramin-T, we find the same advantages that have been so well given by the speakers.

With regard to the Carrel-Dakin treatment, the objection that it makes the skin soft is, I think, the best thing that can be said in its favor. True, we must protect the skin with vaselin, and that requires a lot of work, and takes time. But that principle in the solution by which it can dissolve dead tissue (and the outer layer of skin is dead tissue) is what gives it its greatest usefulness. Yet it is not a cure-all.

The work in the paper of Dr. Cummins is most splendid. I feel that this war is doing something for us. We are getting together. Among the industrial surgeons, we feel that it has brought the company and the men nearer to the doctor, the men nearer to the company and to the doctor, and the doctor nearer to the company and the men; that we are all working for the common good. I believe that there will be a lasting bettering of our conditions, a bettering of our industries.

There is one problem in regard to the industries that I wish to speak of particularly, and that is the sanitation of our barracks. We are employing thousands of men that we must house. We have in our own company a thousand men that we must house in temporary barracks. We have janitors who make the beds every day, and see that they are clean. We are watching closely the sanitation of these men—the sanitation of the working places, to prevent occupational diseases, and the sanitation of the homes of these men. Both fields must be covered by the industrial surgeon.

Dr. J. D. Milligan, Pittsburgh and Lake Erie Railroad Company, Pittsburgh: I am diametrically opposed to this view. I wish to say just a little about the question of antisepsis. Long before we were born they discovered that the first thing of all in the treatment of wounds was cleanliness; but when Lord Lister came to New York and did the first aseptic operation done in the United States, an amputation of the thigh, performed at Bellevue Hospital, he said to the students, "Gentlemen, this man will make a good and complete recovery, provided that there is union by first intention and that there be no pus." There was no pus, and we were satisfied that we had discovered something in carbolic acid that would prevent contamination of wounds. We got on very well for a while. Then we discovered that bichlorid of mercury was the savior of men. We have another antiseptic today, and a different one tomorrow. We are keeping on, getting more and more. They are all good; but clean the wound first. Use a little smattering of iodin. It never did any harm to any of my cases during forty years. The percentage of pus is not any greater with that than with other antiseptics. But first of all, you must have cleanliness, for that decides the fate of the patient.

I thank you for your courtesy in allowing me to get this out of my system.

Dr. M. E. Griffith, Pittsburgh Steel Company, Monessen: For two years, about four years ago, all the accidents of the Pittsburgh Steel Company were treated with sterile water, no antiseptic of any description being employed during the two years in the case of any wound received in any of the accidents of the Pittsburgh Steel Company. It is my opinion that neither before nor since has any treatment improved on the results that grew out of the use of sterile water only in these cases.

Dr. Patterson: In closing this meeting, I wish to express the deep gratitude that this commonwealth owes to all who came here and gave their time to help in conserving the health and lives of our workpeople. We appreciate your courtesy in coming, and shall be delighted if you will stay for the next two days, when the annual meeting of the Welfare and Efficiency Conference will be held here, and when I hope to induce Mr. Lightner and Dr. Mock to put before the manufacturers their plan, and so secure the active support of all employers of labor.

I thank you all, and the meeting stands adjourned.

Adjourned sine die at 6 p. m.

List of Persons Attending the Fifth Conference of Industrial Physicians and Surgeons, Held Under the Direction of the Department of Labor and Industry, Nov. 20, 1917

Dr. Arthur M. Adams, 4549 Pulaski Ave., Philadelphia; American International Shipbuilding Corp., 140 N. Broad St.

Dr. C. D. Ambrose, Ligonier; Ramsey Coal Co.

Dr. John M. Askey, Carmichaels; Buckeye Coal Co.

Samuel Atmore, 6328 Beechwood St., Philadelphia; Pennsylvania Department of Labor and Industry.

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WAR BREAD

By Samuel G. Dixon, State Health Commissioner

Facing the great economies that must be practiced in the time of war and in the future, as the population increases and the natural productions of the earth become depleted, it will be necessary for us to adjust what we have in the way of essentials; especially is this so of foodstuffs.

It, therefore, becomes important to know what combinations can be made and the relative food value of such combinations with our standard foodstuffs. One of Philadelphia's able chemists has given me a bread combination which he worked up with his wife's cooperation.

They use corn flour, which heretofore has been almost unknown in our domestic bakeries, and it would seem to open the way for a very large saving of our wheat flour. It must be distinctly understood first that there is a great difference between corn flour and corn meal. The corn flour in composition is virtually the same as the corn meal, but it contains a little more protein and starch and a little less moisture and fat, the shortage of fat being due to the fact that the germ is extracted before grinding. It must be further understood that you cannot replace all of the wheat flour with corn flour, as the corn contains no gluten, which is the constituent in wheat flour that makes it possible to obtain a raised dough.

However, bread and rolls made with 20 per cent. of corn flour have little or no corn taste, and this is the percentage which has been found after long experiments to produce the best bread. The same proportion can be used also for griddle cakes, pastry and cakes.

To make bread as it is made in the average household, where a sponge is set and not accurate measure of the flour is made, the better plan is to mix a quantity of the two flours, keep it on hand and use the mixture instead of wheat flour. For a 20 per cent. mixture take one quart of corn flour and four quarts of wheat flour, mix thoroughly, preferably by putting through a flour sifter three or four times. Of course, larger quantities may be mixed at one time, keeping the proper proportion. In pastry even larger proportion of the corn flour may be used. In making bread, pastry, etc., use this mixture in exactly the same proportions and treat it exactly as you would ordinary flour.

In nutritive value the difference between the mixed-flour bread and the all-wheat-flour bread is very slight. Their food value is virtually the same, and if white corn flour is used, the bread has the same appearance as the all-wheat bread.

This bread has a decided advantage for everyday consumption over most of the war breads made of whole wheat, oat flakes, bran, etc., by being free of the roughage, and consequently it is not irritating when used meal after meal and day after day and one would not be apt to tire of eating it every day.

Corn flour can be obtained from grocers or they can get it for you, as it is regularly on the market and is being made by a number of milling companies, and in cost should be cheaper than wheat flour. It should be ground as fine, or nearly as fine, as the wheat flour which you are in the habit of using.

This bread makes a 20 per cent. saving of the wheat with virtually no loss in food value and without any of the objectionable features of the coarser meals.

"The sacrifices we are exacting of the noble American boys who are going to the bloody fields of France for the lives and liberty of us who stay at home call to us with an irresistible appeal to support them with our most earnest efforts in the work we must do at home."—Secretary McAdoo.

THE PENNSYLVANIA MEDICAL JOURNAL

Published Monthly — Official Organ of the Medical Society of the State of Pennsylvania

CYRUS LEE STEVENS, A.M., M.D., Editor

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ATHENS, PA., MARCH, 1918

DEATH OF PRESIDENT DIXON

Samuel Gibson Dixon, M.D., LL.D., D.Sc., president of the Medical Society of the State of Pennsylvania, died in the University Hospital, Philadelphia, February 26, 1918, having been sick since last summer. The JOURNAL for September, 1917, the time when Dr. Dixon assumed the duties of president, contained an editorial touching on his activities.

During the 1907 session of the legislature the writer became acquainted with Dr. Dixon, and his impression of the man can be gathered from an editorial in the March, 1907, issue of the JOURNAL, in which when referring to Dr. Dixon's reappointment by Governor Stuart the following was written:

> In order to build up and maintain this splendid organization Dr. Dixon spends more hours in his office than any other officer in the capitol. He is among the first to reach his office in the morning, and it is oftener after than before midnight when his work is ended. Throughout the busy days the same uniform kindly courtesy is shown to callers from the city and from the country, to the legislator and to the crank with his complaint. No rational man or woman could spend a half hour with one of such quiet, genial and manly ways and then go out and speak of him in the terms used by the average antivaccinationist. However, back of his manly smile and gentle ways one can read the character that has made Dr. Dixon renowned as a scholar, a practical sanitarian and an efficient executive.
>
> Medical men and their families, as well as laymen, reap, perhaps unconsciously, the benefits accruing from the work done in the Department of Health, but the former have an additional reason for congratulation in the knowledge that under all situations the honor of the profession as well as the welfare of our people will be well conserved by Dr. Dixon.

The following editorial in the *Public Ledger*, like the editorials in other papers throughout the state, shows the appreciation of the work done by our friend Dr. Dixon:

> Few states have been better served by a public servant, who at the same time was a distinguished citizen, than has Pennsylvania by Dr. Samuel G.

Dixon, the Commissioner of Health since the establishment of the new department in 1905. By family and training representative of the best in Philadelphia, possessing professional abilities of marked order, not only in his chosen line of medicine, but also in the law, since he was also a member of the bar, and forced by the obligation of large means to take a practical part in financial and corporation as well as institutional affairs, Dr. Dixon never lost his enthusiasm for public service. This was his calling, this was the thing nearest to his heart; and whatever his other activities, they seemed to spur him on to new endeavors in his work for the state. His ambition was to make the Department of Health the thing closest to the people and at their command for their protection individually and in all social and communal relationships. Naturally, the intensity of the application in developing what is recognized as a model department in twelve years, on an enormous scale at that, led to the serious impairment of his own health. His death, therefore, is a real sacrifice to the good of the commonwealth, and no heroic action on the field of battle could be more marked by evidence of devoted patriotism than is the fact that for years after he was ordered to give up work he kept unremittingly at it and stuck it out to the very end.

While his work as the administrator of a great department, which was virtually his own creation, will be his chief monument, it is to be remembered that Dr. Dixon was something more than a scientific executive, however well he may have deserved the recognition for this kind of service that came to him from his community and the country at large. In fact, as a bacteriologist, as a specialist in hygiene, sanitation and preventive medicine, he was an original investigator in laboratories abroad and at home. His work on variations of the tubercle bacillus and his development of tuberculins, some of which antedated the Koch discoveries of 1889, gave him priority in a field which is still exercising the attention of specialists, with many of the original claims of the German savant marked as not accepted. Moreover, Dr. Dixon, through his long tenure of office as president of the Academy of Natural Sciences, which under him celebrated its centenary, was one of a group of men who held America true to its traditions as a country where, whatever the material distractions were, the cause of pure science should never be allowed to languish. Dr. Dixon's work in these lines was applied immediately in the department work, and the scientific character of the organization as a whole is unexcelled anywhere in the country. In the treatment of the large endemic diseases, such as typhoid and tuberculosis, while a past master in the matter of prevention and believing that above all question of the cure of disease was the need of protecting the public from it, at the same time he overlooked none of the means or methods of cure that his department might apply broadly the state over. Hence the intelligent use of antitoxins, the thorough application of vaccines and the development of the sanatoria for the tuberculous were all part and parcel of the same careful concern for the public that gave the department its gold medal for pre-eminence at the Panama-Pacific Exposition.

As a result of his twelve years of arduous labor, Pennsylvania has a Department of Health that is recognized as reaching the highest American standard. What this means to the people is shown in the decrease of the death rate and in the fact that the incident of certain diseases once common is decreasing almost to invisibility. Moreover, the orderly administration that underlies comfort of the individual and the uplift of the community were all developed by Dr. Dixon, who utilized the old and shaped the new legislation to promote those ends that he believed would make Pennsylvania the model sanitary commonwealth of the Union. That he had largely accomplished this was the only satisfaction he asked for. And that his unselfish services to his state afforded an example to officials and public servants unfortunately all too rare is not the least thing to his credit.

OUR NEW EXECUTIVE

The By-Laws provide that "in the event of the president's death, resignation or removal, the ranking vice-president shall succeed him." Our present executive is, therefore, Dr. Walter F. Donaldson of Pittsburgh, son of the late Dr. John B. Donaldson, who was for many years the energetic secretary of the Washington County Medical Society, and who was president of the state society in 1910.

Dr. Walter F. Donaldson is familiar with the work of the organization, having held important positions in both the Allegheny County Society and the state society during the past fifteen years, and will make an efficient president.

THE PHYSICIAN'S ATTITUDE TOWARD ALCOHOL

It will be conceded that physicians are using less and less alcohol in their practice and at their social functions, that it has little, if any, food value and that in most cases where it may be indicated medicinally some other remedy will answer equally well or better. No one knows better than the doctor the evils of the use of alcohol on the individual, his family, his posterity and the community in general. Next to the family of the drinking man the sympathetic general practitioner suffers most from the drink habit, since the doctor who attends the drinker's family usually does so without any remuneration. The physician also knows that even the moderate use of alcohol works to the detriment of the individual and his posterity. Each year not a few of our brightest medical men drop out of the society because of their drinking habits. Most of our county societies suffer in reputation and in numbers because of the drinking habits of some physicians.

What should be the attitude of physicians toward the use of alcoholic beverages, what the attitude of the organized profession toward the efforts to enact a local option law in Pennsylvania that will allow the voters of any county to decide whether they wish licenses to be granted in that county or not, what the attitude toward the efforts to have our legislature ratify the national prohibitory amendment which has already been ratified by Mississippi, Virginia, Kentucky, North Dakota, South Carolina, Maryland, Montana and Texas?

Not long ago a distinguished judge was the guest of honor at the annual banquet of one of our county societies and made the principal address of the evening. He charged the physicians present with being inconsistent because they had a side table open during the evening with free drinks, while some of the members had charged him for the professional advice that he should not use alcoholic beverages. It can be said that this judge has never been accused of leaning toward the temperance forces during license court and is probably not a "temperance crank." The statement has been made that local option or prohibitory laws can easily be passed and enforced in any state in which the church and the medical profession are alive to their responsibilities. Is this mere talk or has the profession a real responsibility in this matter? The Wayne County Society (Detroit) by a vote of more than four to one passed a resolution favoring state-wide prohibition, and Michigan went dry by a majority of about 80,000.

If the temperance question were simply one of morals and economics, then the profession might decline as a profession to take part in the campaign, but it is a question of the health of our community today and its future welfare. It is an admitted fact that the children of alcoholic parents are predisposed to disease and have decidedly less resistant force against disease and accidents than the children of abstainers. More than this, the children of drinking parents are usually brought up in poverty and in an environment that predisposes to disease, dissipation and crime.

The Medical Society of the State of Pennsylvania has been in the lead in the campaign for the prevention of tuberculosis, cancer and venereal diseases, and for the proper care of the insane. Can it consistently remain silent in the campaign to lessen the use of alcoholic beverages, which is a large factor in increasing the ravages of at least three of these diseases?

The columns of The Journal are open to any communication on this question, conditioned only on the article being brief, free from personalities and signed by the author's name.

THE OWEN-DYER BILL FOR INCREASED RANK

Since the United States entered the war several attempts have been made to secure legislation looking to fairer treatment than now prevails for those physicians who have offered their services to the government and who have been commissioned in the Medical Reserve Corps. For one reason or another, thus far these attempts have failed. However, on February 5 there was introduced into both houses of Congress a bill so fair and so just in principle that no logical argument can be brought against it. Nevertheless, few outside of the medical profession will be interested in stimulating Congress to act favorably on this measure; if physicians do not act, the bill may fail of passage.

Members should write Senators Boies Penrose and George T. Oliver, urging the passage of this bill, also their representative in Congress and the following representatives at large: Thomas Spencer Crago, Waynesburg; Mahlon M. Garland, Pittsburgh; Joseph McLaughlin and John R. K. Scott, Philadelphia.

The bill, which has the enthusiastic endorsement of the officers of the American Medical Association, is as follows:

Second Session. H. R. 9563

In the Senate of the United States, and in the House of Representatives, Feb. 5, 1918, Mr. Owen and Mr. Dyer introduced the following Bill; which was read twice and referred to the Committee on Military Affairs.

Fixing the grades of the commissioned officers of the Medical Corps and of the Medical Reserve Corps of the United States Army on active duty, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That hereafter the commissioned officers of the Medical Corps and of the Medical Reserve Corps of the United States Army on active duty shall be distributed in the several grades in the same ratios heretofore established by law in the Medical Corps of the United States Navy.

The Surgeon-General shall have authority to designate as "consultants" officers of either corps and relieve them as the interests of the service may require.

The following is part of an editorial in *The Journal of the American Medical Association* for February 23, 1918:

> The Owen-Dyer bill will, we are sure, have the approval of every physician, whether he be in the Medical Corps, in the Medical Reserve Corps, or a private in the ranks of the general profession. It is not only a bill that we can heartily endorse, but also one that we should feel it a duty to support. But those who write to their congressmen or senators should inform them that the increased rank, and the authority which goes with it, is desired not for the

increased pay which will come with the advanced rank, nor as a salve to the pride of these officers, but primarily in the interest of sanitary and health conditions of our army and as common justice to men who are making tremendous sacrifices. Nevertheless, whatever may be the verdict of Congress in this matter, medical men will play the game and do their duty; but Congress should be given to understand that these men at the present time are working under a heavy handicap which a wise Congress will remove without delay.

WILL YOU WRITE A PAPER FOR THE ANNUAL MEETING?

The Committee on Scientific Work invites you to write a paper for the Philadelphia Session. Many of the men who have most frequently entertained and instructed us at our annual gatherings are now in the service of our country, but there are left enough good men to give us a first-class meeting, and, what is more, Dr. Klotz and the section officers are determined to present a well-balanced program that will make our members wish to be in Philadelphia next September. If you will write a paper, please send the subject before May 1 to the chairman of the committee, Dr. Klotz, or to the appropriate section officer, names and addresses of whom will be found on advertising page vi.

WHAT IS TRUE IN COLORADO IS EQUALLY TRUE IN PENNSYLVANIA

The following is clipped from the February issue of *Colorado Medicine:*

> The service of many medical men with the army will, for the duration of the war, create more or less financial difficulty in the conduct of our medical organizations. Our state and county medical societies will be deprived of the revenue usually obtained from those members who have gone to war. On those of us who are left behind it is therefore more than ever incumbent to reduce official labors and make the financial wheels work as smoothly as possible, by paying our dues promptly, and preferably without waiting to be asked for them by the officers of our respective organizations. In other words, let us display not merely a willingness, but an anxiety, to do our "bit." Incidentally, it would be a good thing if each of us could make it his duty and pleasure to urge into the medical fold all practicing physicians who are eligible but have not yet joined their local societies.

In Wisconsin seven county societies had reported to the state secretary by February 1 all their members as paid; seventeen more had paid for 75 per cent. of their number, and nine more had paid for half their members. Do they have more money out West, or are their members more loyal to the organization? Perhaps they have a state secretary who knows how to get results.

THE AMERICAN JOURNAL OF OPHTHALMOLOGY AND ADVERTISING

Our January General News Items called attention to the consolidation of six ophthalmological journals in the new *American Journal of Ophthalmology*. The first number, January, of this publication has an editorial on Advertising, the first two paragraphs of which are given below. The editor, Dr. Edward Jackson of Denver, formerly of Philadelphia, is a man who can be relied on to keep all the columns of the publication clean in every respect.

> "The advertising pages of the modern magazine or newspaper have been the place where individual whim and exploitation could develop, unchecked by any consideration of cooperative benefit. But in this journal, just as certainly as in the reading pages, cooperation for mutual benefit will dominate the policy with regard to advertising. This benefit will not be mutual merely for advertisers and publishers. The subscribers, as having by far the largest interest and having first made the journal possible, will receive the largest consideration.
>
> "These aims will be borne steadily in mind. The things advertised will be things in which ophthalmologists are especially interested. Only strictly ethical advertisements will be admitted. Only such drugs will be advertised as conform to the requirements of the Council on Pharmacy and Chemistry of the American Medical Association. Along all lines only responsible firms and institutions, that can be relied on to make good their promises, will be admitted to these pages."

MINNESOTA MEDICINE

The first number of *Minnesota Medicine* made its appearance in January with Dr. Ernest T. F. Richards, St. Paul, as editor, and the Minnesota State Medical Association, owner and publisher. The size of the printed page is the same as our journal and the editorial and mechanical work is in every way worthy of the medical profession of Minnesota. This is the twenty-eighth state medical journal that follows the plan of admitting to its advertising pages only such articles as comply with the rules of the Council on Pharmacy and Chemistry of the American Medical Association. It is difficult to harmonize the double standard adopted by some medical journals published on a purely business basis where the editorial management and the advertising department are supposed to be independent one from the other. It must be humiliating for some of our medical editors who are recognized as honorable and ethical to reflect on the conflict between the scientific matter and the advertisements in their journals.

JOURNAL UNAVOIDABLY LATE

Most organizations and undertakings suffer more or less from complications due to the war, and we should all be ready good naturedly to accept such conditions and to give the fighting forces the preference over our own convenience. We may all consider ourselves fortunate if we are not called on to make much greater sacrifices.

The February Journal was not mailed until the first week in March owing to war conditions, and this issue may also be delayed. It is noted that for economic reasons many of the medical journals are cutting down their usual number of pages, and not a few are using a poorer quality of paper. Efforts are made to make the Journal a credit to Pennsylvania physicians. Expressions of appreciation go a long way toward compensating for the many annoyances that come almost daily to the secretary-editor.

OHIO AND PENNSYLVANIA ARE NEIGHBORS

In Ohio the *per capita* assessment on county societies is $4. In Pennsylvania it is only $2.75.

In Ohio most of the county societies have already agreed to remit the annual dues of members in the service of the country, but these county societies will pay to the state society the four-dollar *per capita* assessment on the members whose dues are remitted. In Pennsylvania the state society remits the *per capita* assessment where the county society remits the annual dues. Forty-four county societies have thus far voted to remit the dues. This will lessen the income of our state society some four thousand dollars for 1918.

In Ohio on January 19 twenty-five county societies had paid the 1918 *per capita* assessment for as many members as they had in 1917. In Pennsylvania at this writing, March 7, only two societies, Union and Wyoming, have paid the *per capita* assessment for all of their members of 1917.

The question arises: Wherein lies the difference? Is it in the state secretary, the state councilors, the county presidents, the county secretaries and treasurers, or in our members? This is a personal question that we officers and members should ask ourselves. We are at war and each one of us should be willing not only to do our "bit" but to do our best. Are we doing it?

COUNTY SOCIETY HONOR ROLL

Union and Wyoming County Societies have forwarded 1918 receipts and *per capita* assessment for all of their 1917 membership. Greene County has paid for all but one of her members and several other societies for a large proportion, but at this writing, March 7, there are fourteen societies that have not paid for any of their members, and twenty-one societies that have not yet reported the officers for 1918. Next month it may be necessary to publish a Slacker Roll of both county societies and members.

Weather conditions have made it practically impossible for some of the societies to hold meetings during January and February, but it is evident that some of the county secretaries have not lived up to the letter of the law as regards their responsibility in collecting dues and reporting newly elected officers, while a still larger number have failed in the spirit of the law in connection with their privileges and responsibilities in these respects.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported up to March 1:

Allegheny County: *Death*—John Francis Mohan (Cornell Univ. Med. Coll., New York, '03) in Pittsburgh, January 22, aged 37. *Resignation*—Robert B. Armstrong (Transferred to Iowa). *Removals*—Charles H. Aufhammer from Pittsburgh to 10 Scott St., Lake Forest, Ill.; Nelson H. Clark from Pittsburgh to 10 Scott St., Lake Forest, Ill.; Robert M. Entwisle from Pittsburgh to 401 Park Ave., Johnstown (Cambria County); Austin C. Frank from Pittsburgh to 138 Brownsville Rd., Mt. Oliver; Edward E. Hamer from Pittsburgh to 301 California Ave., Avalon; Joseph L. McGinley from Pittsburgh to Scott St., Wilkes-Barre (Luzerne County); Charles B. Maits from Pittsburgh to 697 N. Michigan Ave., Pasadena, Calif.; Chauncey L. Palmer from Mt. Lebanon to 655 Washington Rd., Pittsburgh; Nathan F. Phillips from Mt. Lebanon to 401 Washington Rd., Pittsburgh; H. MacVicker Smith from Pittsburgh to 401 E. State St., Olean, N. Y.; Francis H. Wade from Allegheny to Hotel Westminster, Boston, Mass.; William S. Watson from Pittsburgh to Library.

Berks County: *New Members*—David S. Grim, Horace E. Schlemm, Reading.

Blair County: *Removals*—David F. Haagen from New York City to 227 Fourth St., Union Hill, N. J.; Andrew S. Stayer from Danville, Ill., to National Soldiers Home, Wis.

Bucks County: *New Members*—Victor J. P. Jourdan, Bristol; Clarence A. Paulus, Telford; Russell Richardson, Newtown. *Removal*—Stephen S. P. Wetmore from Morrisville to 3006 Atlantic Ave., Atlantic City, N. J.

Chester County: *Removal*—C. Norwood Wherry from Chatham to 901 Chess St., Monongahela (Washington County).

Clarion County: *New Members*—John N. Camp, Foxburg (by transfer from Indiana County); C. A. Fitzgerald, Clarion.

Clearfield County: *New Member*—Samuel J. Morris, Boardman (by transfer from Jefferson County). *Death*—Francis Guerney Bennett (Jefferson Med. Coll., '89) of Freeport (Armstrong County) at Norwich (McKean County) January 15, from pneumonia, aged 50.

Crawford County: *Removal*—V. Burton Eiler from Titusville to Conneautville.

Cumberland County: *New Member*—John E. Beale, Lemoyne (by transfer from Schuylkill County Society).

Dauphin County: *New Member*—Edward M. Green, Harrisburg.

Delaware County: *New Member*—Joseph F. Dunn, Chester.

Erie County: *New Member*—Walter G. Stroble, Erie (by transfer from Lycoming County).

Fayette County: *Removals*—Harry Brady from Masontown to Grays Landing; William J. Churchill from South Connellsville to 115 S. Bunkerhill Ave., Los Angeles, Calif.

Indiana County: *Transfer*—John N. Camp, to Clarion County Society.

Jeferson County: *Transfer*—Samuel J. Morris, to Clearfield County Society.

Lackawanna County: *New Members*—John J. Barder, Michael A. Carroll, Leo P. Gibbons, Robert E. Thomas, Joseph A. Wagner, Patrick H. Walker, Daniel A. Webb, Scranton.

Lawrence County: *Removal*—James C. B. Douthett from Pulaski to 1828 Lombard St., Philadelphia.

Lebanon County: *New Member*—Floyd E. Shaffer, Lebanon.

Lycoming County: *Death*—Elmer S. Hull (Jefferson Med. Coll., '84) of Montgomery, in Augusta, Ga., January 27, from cerebral hemorrhage, aged 56. *Transfer*—Walter G. Stroble, to Erie County Society. *Removal*—Joseph C. Fulmer from Evansville, Ind., to 1116 E. Third St., Williamsport.

Mercer County: *New Member*—John Francis Spearman, Sharon.

Mifflin County: *Removal*—Elizabeth Allison from Madison, Wis., to 135 E. Fifty-Second St., New York City.

Monroe County: *Death*—John A. Hagerman (Univ. of Pennsylvania, '78) in Sciota, January 27, from pneumonia, aged 67.

Northampton County: *New Member*—Leigh B. Shiffer, Easton. *Removal.*—Francis S. Chambers from Easton to 7321 Bayer St., Mt. Airy, Philadelphia.

Northumberland County: *Death*—P. Joseph Faughnan (Coll. of Phys. and Surg., Baltimore, '92) in Locust Gap, January 28, from acute indigestion, aged 51.

Philadelphia County: *Deaths*—Anthony George Baker (Jefferson Med. Coll., '78) in Philadelphia, February 17, aged 69; Clarence Davis Bradley (Univ. of Pennsylvania, '07) of Philadelphia, at Camp Greene, Charlotte, N. C., February 1, aged 38; Annie Louisa Connor (Woman's Med. Coll. of Pennsylvania, '01) in Philadelphia, January 25, aged 42; John M. Craig (Univ. of Michigan, Ann Arbor, '98) in Philadelphia, December 26, from pneumonia, aged 55; Samuel G. Dixon (Univ. of Pennsylvania, '86) of Bryn Mawr, in Philadelphia, February 27, from anemia, aged 66; Thomas J. Mays (Jefferson Med. Coll., '68) in Philadelphia, February 14, aged 72; Charles Smith Turnbull (Univ. of Pennsylvania, '71) in Philadelphia, February 21, from pneumonia, aged 65; James Wilson Walk (Univ. of Pennsylvania, '78) in Philadelphia, January 19, aged 64. *Removal*—LeRoy A. Wilkes from Philadelphia to First National Bank Bldg., Bridgeport, Conn.

Schuylkill County: *Transfer*—John E. Beale, to Cumberland County Society.

Venango County: *New Member*—Charles H. Ashton, Franklin.

Westmoreland County: *Removal*—Samuel P. Boyer from Derry to Pittsburgh Maternity Dispensary, Forbes and Halket Sts., Pittsburgh.

York County: *Death*—Israel H. Betz (Jefferson Med. Coll., '68) in York, January 6, from nephritis, aged 76.

PAYMENT OF PER CAPITA ASSESSMENT

The *per capita* assessment for the year 1917 has been received from component county societies since January 15, as acknowledged on page 313 of the February Journal, as follows:

1918				
2/14	—Lackawanna	190–192	6914–6916	$ 8.25

The *per capita* assessment for the year 1918 has been received from component county societies since February 1, as acknowledged on page 313 of the February Journal, as follows:

1918				
2/ 2	—Erie	1–20	929– 948	$55.00
2/ 4	—Columbia	26	949	2.75
	Mercer	26–28	950– 952	8.25
2/ 7	—Northampton	18, 21, 22, 24–41	953– 973	57.75
	Snyder	1–3	974– 976	8.25
2/ 8	—Northumberland	16, 18–30	977– 990	38.50
	Northumberland	17, 31–37*	991– 998	
	Bucks	46–47, 59–61	999–1003	13.75
	Bucks	48–58*	1004–1014	
2/ 9	—Delaware	2–14	1015–1027	35.75
	Delaware	15–27*	1028–1040	
2/11	—Mifflin	17–20	1041–1044	11.00
	Somerset	26	1045	2.75
2/13	—Venango	2–9	1046–1053	22.00
	Adams	15–19	1054–1058	13.75
2/14	—Lackawanna	1–15, 49–58, 60, 61, 63–69, 75, 77–81	1059–1098	112.75
	Lackawanna	16–48, 59, 62, 70–72, 74, 76, 82*	1099–1139	
	Mifflin	21	1140	2.75
2/15	—Butler	1–8	1141–1148	22.00
	Butler	9–14*	1149–1154	
	Somerset	27	1155	2.75
	Luzerne	61–78, 80–81	1156–1175	55.00
2/16	—Columbia	27–31	1176–1180	13.75
	Monroe	3	1181	2.75
	Elk	1–12	1182–1193	33.00
	Elk	13*	1194	

2/18	Fayette	48, 50–55	1195–1201	19.25
	Fayette	49, 56–57*	1202–1204	
	Clearfield	33–45	1205–1217	35.75
2/19	Bucks	62–65	1218–1221	11.00
	Bucks	66*	1222	
	Dauphin	45–71	1223–1249	74.25
	Center	1–3	1250–1252	8.25
	Center	4–6*	1253–1255	
2/20	Bedford	4	1256	2.75
	Monroe	4–7*	1257–1260	
	Wayne	21–22	1261–1262	5.50
2/23	York	63–91	1263–1291	79.75
2/25	Delaware	28–51	1292–1315	66.00
	Lebanon	9–14	1316–1321	16.50
	Elk	14–15	1322–1323	5.50
	Blair	37–40	1324–1327	11.00
	Beaver	22–25, 27–31	1328–1336	24.75
	Beaver	26, 32–37*	1337–1343	
2/26	Wyoming	14	1344	2.75
	Clarion	1–28	1345–1372	79.75
	Clarion	29*	1373	
2/27	Adams	20	1374	2.75
	Bradford	21–27	1375–1381	19.25
	Berks	51–52*	1382–1383	
	Berks	53–73	1384–1404	57.75
	Somerset	28	1405	2.75
2/28	Union	17–18	1406–1407	5.50
3/1	Monroe	8–11	1408–1411	11.00
	Butler	15	1412	2.75
	Warren	1–19	1413–1431	52.25
	Allegheny	1–18, 20, 22–31, 33–77, 79–132, 158–199, 201–216, 218–237, 312, 313, 335	1432–1640	574.75
3/2	Lycoming	44–58	1641–1655	41.25
	Cumberland	26	1656	2.75
3/4	Delaware	52–59	1657–1664	22.00
	Columbia	32–33	1665–1666	5.50
	Blair	41–51	1667–1677	30.25
	Wyoming	15	1678	2.75
3/5	Elk	16–18	1679–1681	8.25
	Montgomery	80–95	1682–1697	44.00
	Montgomery	96*	1698	
	Lehigh	1–31, 40	1699–1730	88.00
	Lehigh	32–39*	1731–1738	
	Clinton	15	1739	2.75
3/6	Snyder	4–10	1740–1746	19.25
	Snyder	11–12*	1747–1748	
	Luzerne	81–108	1749–1775	74.25
3/7	Franklin	17–30	1776–1789	38.50
	Franklin	31*	1790	
	Lackawanna	85–107	1791–1813	60.50
3/8	Columbia	34	1814	2.75
	Nort'am'ton	23, 42–68, 70–93	1815–1866	145.75
	Northampton	69*	1867	
3/9	Luzerne	58	1868	2.75
	Crawford	19–29	1869–1879	30.25
	Schuylkill	1–45	1880–1924	123.75

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*Dues remitted.

STATE NEWS ITEMS

BORN

To Dr. and Mrs. Francis W. Sinkler, Philadelphia, a daughter, Mildred Pearce Sinkler.

To Dr. and Mrs. Thomas C. Stellwagen, Jr., Philadelphia, a daughter. Elizabeth Coane Stellwagen.

MARRIED

Dr. Charles Robert Graham, Brownsville, and Buelah Minerva Glosner, New Castle, January 15.

Dr. Hope Thomas Martin Ritter, Allentown, and Miss Sarah Snyder, Philipsburg, in Philadelphia, January 9.

DIED

Dr. Daniel Karsner (Jefferson Med. Coll., '65) in Philadelphia, February 9, aged 76.

Dr. Horace Ladd (Jefferson Med. Coll., '47) in Philadelphia, February 24, aged 91.

Dr. Howard Fackenthal (Univ. of Pennsylvania, '76) in Easton, February 26, aged 64.

Dr. Albert J. Ainey (Yale Univ. School of Med., '67) in Brooklyn, February 25, aged 80.

Dr. Charles Henry Stoeckle (Univ. of Pennsylvania, '92) in Ludlow, January 31, aged 50.

Dr. Franklin Benjamin Staub (Univ. of Pittsburgh, '99) in Pittsburgh, January 3, aged 41.

Dr. Eugene Harold James (Univ. of Pennsylvania, '79) in Harrisburg, January 27, aged 60.

Dr. Anna McCullough (Woman's Med. Coll. of Pennsylvania) in Philadelphia, February 10, aged 86.

Dr. William Clark Leet (Coll. of Phys. and Surg., Baltimore, '81) in Washington, January 30, aged 80.

Dr. Charles Moore Benham (Hahnemann Med. Coll., Philadelphia, '91) in Phoenixville, January 10, aged 52.

Dr. Montrose Graham Tull (Univ. of Pennsylvania, '85) in Philadelphia, January 25, from pneumonia, aged 58.

Dr. Benjamin Gordon Boyce (Cleveland Homeopathic Med. Coll., '03) in Springboro, January 6, from nephritis, aged 44.

Dr. William Nelson Hammond (Hahnemann Med. Coll., Philadelphia, '04) in Philadelphia, January 22, from pneumonia, aged 44.

Dr. Joseph H. Horner (Jefferson Med. Coll., '66) of Concordville, in Columbus, Ohio, December 27, from pyemia, aged 73.

ITEMS

Lieut.-Col. C. J. Marshall has been placed in charge of the veterinary service of the U. S. Army.

The Markleton Sanatorium in Somerset county has been taken over by the government for a war hospital.

Dr. J. Purd Kerr, a member of the Pittsburgh city council, was on February 23 commissioned major in the army.

Dr. Lowell M. Gates, Scranton, is the president of the new American Bank of Commerce which began business in Scranton, March 16.

Dr. Roy Deck, Hollidaysburg, was wounded recently while serving with the British army on the western front.

Typhoid Fever in Armstrong County.—Forty-one cases of typhoid fever were reported at Ford City up to March 1.

Dr. Roger R. Rupp, Lehighton, has succeeded the late Dr. John W. Luther as chief surgeon of the Palmerton Hospital.

Lieut. G. Franklin Bell, M.O.R.C., who has been seriously sick at cantonment camp, Greenville, S. C., is now out of danger.

Dr. John A. Klump, Williamsport,, succeeds Dr. A. D. Hardt as member of the Middle Judicial District Exemption Board of Appeals.

Dr. Edward S. Dougherty, Ashley, was severely injured recently when an automobile in which he was riding crashed into a telegraph pole.

MAJOR JOSEPH SAILER, Philadelphia, has been appointed permanent chief of the medical staff at the base hospital, Camp Wheeler, Macon, Ga.

DR. JOHN G. WILSON, Montrose, has been appointed resident physician at the Hillside Sanitarium for Mental Defectives and Indigents, near Scranton.

THE STATE INSTITUTION FOR FEEBLE-MINDED WOMEN at Laurelton, Union County, will start work on two new cottages as soon as the weather permits.

DR. SAMUEL H. HELLER, Lancaster, was on March 2 appointed by Governor Brumbaugh as captain and assistant surgeon, First Infantry, Reserve Militia.

DR. GEORGE A. KNOWLES, Philadelphia, was on February 27, appointed by Governor Brumbaugh a trustee of the State Hospital for the Insane at Norristown.

MAJOR JONATHAN M. WAINWRIGHT, Scranton, has been sick with pneumonia at the base hospital, Camp Greene, Charlotte, N. C., of which he is the chief of staff.

PASS BUREAU OF MEDICAL EDUCATION AND LICENSURE.—Forty students passed the examinations given by the state board, January 8-10, four of them being women.

DR. JAMES W. HARPER, FOREST GROVE, Bucks County, has accepted a surgeonship with the Westinghouse Electric Company, and his address is 5919 Alder St., Pittsburgh.

THE PENNSYLVANIA PHARMACIST, the official quarterly issued by the Pennsylvania Pharmaceutical Association, made its first appearance in January. R. P. Fischelis, Philadelphia, is the editor.

NEW SECTION OF COLLEGE OF PHYSICIANS.—The College of Physicians has organized a section on industrial medicine and public health, which will hold meetings in October, December, February and April of each year.

PROFESSOR C. H. LA WALL has been elected as dean of the Philadelphia College of Pharmacy. Prof. J. W. Sturmer was elected dean of the postgraduate course and Prof. F. X. Moerk was elected director of the technical chemistry course.

DR. B. FRANKLIN ROYER, Harrisburg, who has been the chief medical inspector of the Department of Health, was on February 27, designated by Governor Brumbaugh as acting commissioner of health, succeeding the late Dr. Dixon.

PENNSYLVANIA had a lower percentage of men accepted out of those examined by the boards in the first draft than any other state in the Union, only 53.3 being accepted out of 100 men. The percentage for the whole country was 70.9.

MAJOR CHARLES A. E. CODMAN, Philadelphia, has assumed his duties as chief medical officer of Camp Doniphan, Fort Sill, Okla. This is the camp that has recently been investigated as the result of charges of neglect contained in letters read by Senator Chamberlain before the Senate.

MEMORIAL FOR CAPTAIN BRADLEY.—Memorial services for Capt. Clarence D. Bradley, M.R.C., U. S. Army, were held in the forum of the Temple University, February 5. Dr. Bradley died from cerebrospinal meningitis, January 29, at Camp Greene, Charlotte, N. C.

REVOCATION OF LICENSES.—The attorney-general of Pennsylvania has ruled that the presence of all of the members of the Pennsylvania Bureau of Medical Education and Licensure is necessary to revoke a license or to vote recognition to a medical college, whereby its graduates may become eligible for a license in that state.

DR. FRANK HARRIS GARDNER, Lieutenant, M.O.R.C., Montrose, son of the secretary of the Susquehanna County Medical Society, died of pneumonia on February 23, at the Government reservation in Hoboken, N. J., to which place he was ordered for duty from Fort Oglethorpe, Ga., some six weeks before. Dr. Gardner was 28 years of age and was graduated from Jefferson in 1916.

THE PENNSYLVANIA ASSOCIATION FOR THE BLIND has offered to the members of the senior class of the Medical School, University of Pittsburgh, a prize of $100 for the best essay of two thousand words on the prevention of blindness. The committee on award consists of some of the best known oculists and laymen in western Pennsylvania. It is expected to make this offer annually to each senior class.

DR. IRVING GELLMAN, a graduate of the College of Physicians and Surgeons of Boston, has been appointed a resident physician of the State Sanatorium for Tuberculosis at Hamburg. Dr. Gellman is a native of Odessa, Russia, and has had considerable experience in tuberculosis work, having been connected with the Montefiore Home, Bedford Hills, N. Y., and with the Minnesota State Sanatorium, near Walker, Minn.

DR. ANNIE YOUNG, Philadelphia, has recently been appointed resident physician in the Pennsylvania State Sanatorium for Tuberculosis at Hamburg. She is a graduate of Woman's Medical College and served a number of years as a medical missionary in Ceylon and India. Since her return to America, she has been doing postgraduate work at Harvard Medical School; Magill University, Toronto; and at the University of Pennsylvania and the Polyclinic Hospitals in Philadelphia.

MERGER COMPLETED.—A formal decree merging the Polyclinic Hospital and College for Graduates in Medicine and the University of Pennsylvania was filed by Judge Martin in the Common Pleas Court January 28. There were no objections to the petition of merger filed recently by John C. Bell and Henry W. Moore, counsel for the colleges. The plans were approved by the trustees of both colleges. The merger is the beginning of a move to make Philadelphia the medical center of America. The Medico-Chirurgical College and Hospital have already been combined with the University.

THE SIXTH CONFERENCE OF INDUSTRIAL PHYSICIANS AND SURGEONS will be held at Harrisburg on April 9. At the morning session there will be brought up the subject of industrial health hazards arising out of the war emergency; the afternoon session will be devoted to the subject of workmen's compensation. The question of hernia in its relation to the compensation law and the possibility of amendments to the present law, will be discussed. Copies of the program may be obtained on request from Dr. Francis D. Patterson, Chief, Division of Industrial Hygiene and Engineering, Third and North Sts., Harrisburg.

THREE PHILADELPHIA HOSPITAL UNITS IN FRANCE.—Word was received on February 12 of the safe arrival in France of the Presbyterian Hospital Unit, known as U. S. Army Mobile Unit, commanded by Major John H. Jopson, and the Episcopal Base Hospital Unit, known as Unit No. 34, commanded by Major Astley P. C. Ashhurst. The Pennsylvania Base Hospital Unit, known as Unit No. 10, commanded by Major Richard H. Harte, reached France last summer and is still serving with the British forces. Two more Philadelphia units are still training in Philadelphia waiting to be called, the Jefferson and the University units.

New Ward at College Hospital of Woman's Medical College.—Building alterations are nearing completion and a venereal ward and dispensary for the treatment of women and children is shortly to be opened. The Women's Hospital, the West Philadelphia Hospital for Women and the College Hospital are to cooperate in the equipment and maintenance and Dr. Rose Hirschler, Clinical Professor of Dermatology at the College and Chief of the Department of Diseases of the Skin at the Woman's Hospital, has been elected chief. The resident medical and nursing staffs of the three hospitals will participate in the regular rotation of service through this department.

July Examination.—Mr. Nathan C. Schaefer, secretary of the Pennsylvania Bureau of Medical Education and Licensure, reports the practical and written examination held at Philadelphia and Pittsburgh, July 10-12, 1917. The examination covered 5 subjects. An average of 75 per cent. was required to pass. Of the 182 candidates examined, 175 passed and 7 failed. The following colleges were represented:

PASSED

College	Year Grad.	Total No. Licensed
Howard University	(1916)	1
Bennett Medical College	(1915)	1
Hahnemann M. Coll. and Hosp. of Chicago	(1915)	1
	(1916)	1
College of P. and S., Baltimore... (1913) 1;	(1915)	2
Eastern University	(1913)*	1
Johns Hopkins Univ. (1914) 1; (1915) 1;	(1916)	3
Maryland Medical College	(1912)	1
University of Maryland	(1916)	2
Harvard University .....(1911) 1; (1915) 1;	(1916)	1
Fordham University	(1916)	1
Syracuse University	(1913)	1
University of Buffalo	(1916)	1
Leonard Medical School	(1903)	1
University of Cincinnati	(1916)	4
Western Reserve University	(1915)	1
Hahnemann M. C. and Hosp. Phila. (1915) 1;	(1916)	10
Jefferson Medical Coll. of Philadelphia (1914) 1; (1915) 9; (1916) 34.	(1912)	1
Medico-Chirurgical College of Philadelphia (1915) 9; (1916) 28.	(1914)	1
Temple University .....(1914) 1; (1916) 8;	(1917)	1
Univ. of Pennsylvania ..(1913) 1; (1915) 3;	(1916)	10
University of Pittsburgh	(1916)	20
Woman's Med. Coll. of Penn. ..(1915) 2;	(1916)	5
University of Vermont ....(1907) 1;	(1913)	1

FAILED

Hahnemann Med. Coll. and Hosp. of Phila.	(1916)	71.6
Jefferson Medical College of Philadelphia	(1915)	69.8
University of Pennsylvania	(1912)	62.6
University of Berlin	(1908)	73.4
Royal Univ. of Naples.(1892) 60; (1895) 62.2;	(1905)	33

* Graduation not verified.

First Aid Work.—Jennie Russman, a senior of the William Penn High School, Philadelphia, received at the Washington's Birthday exercises the school pin of gold and black enamel for saving the lives of a mother and three small children who were overcome by coal gas on the third floor of their home. Jennie's father broke open the door of the house and they found the four persons unconscious. After carrying them to another room Jennie sent her father for a physician while she applied artificial respiration. When the doctor arrived in twenty minutes the danger was over. The pin was presented by Dr. Florence H. Richards, teacher of first aid and social hygiene, in whose classes Jennie learned what she knew of first aid.

Dr. Martha Tracy has been elected Dean of the Woman's Medical College of Pennsylvania. Dr. Tracy is a graduate of Bryn Mawr College, 1898, and of the Woman's Medical College, 1904, and received the degree of Doctor of Public Hygiene at the University of Pennsylvania in 1917. She served as research worker in the Laboratory of Experimental Pathology at Cornell Medical College from which position she was called to a teaching position in the Department of Chemistry of the Woman's Medical College, later becoming Professor of Physiological Chemistry and Hygiene. As Alumnae Fellow she devoted a year to postgraduate study along lines of physiological chemistry under Dr. Lafayette B. Mendel in the Sheffield Scientific School of Yale University.

GENERAL NEWS ITEMS

Dr. William C. Braisted has been reappointed Surgeon-General in the U. S. Navy.

Dr. Victor C. Vaughan has been promoted to the grade of lieutenant colonel, Medical Reserve Corps, National Army.

Mrs. Peter J. Schweitzer, Brooklyn, has donated $25,000 for building and maintaining a model eye hospital in Palestine.

The National Association for the Study and Prevention of Tuberculosis will hold its next annual meeting in Boston in June.

The University of Maryland has decided to accept women students in the medical department beginning with next October.

Field Hospitals and Ambulance Companies, when drawn by animals, are given an even number, and when by motor power, an odd number.

The Cuban People are reported as suffering from the absolute lack of flour. Lard is scarce and costs $1 a pound, butter is from 70 cents to $1 a pound.

The State Hospital for Inebriates at Knoxville, Iowa, now has only seventy-one patients, there having been a steady diminution in the number since Iowa voted dry.

Major Arthur T. McCormack, Bowling Green, Ky., has been assigned to permanent duty as chief health officer of the Panama Canal, succeeding Col. Albert E. Truby, M.C., U. S. Army.

Dr. John A. Harris has been appointed special deputy police commissioner of New York City, without pay, to regulate traffic. Dr. Harris has for some years made a study of this subject.

The New York Academy of Medicine has proposed a change in its Constitution and By-Laws that will require all members to be "citizens of the United States of America" instead of "residents, etc."

The Hotel Cape May, Cape May, N. J., has been leased by the government at an annual rental of $99,000. The Wissahickon Barracks, where 3,000 naval reserve men are being trained, is only two miles distant.

Provost-Marshal General Crowder's office in Washington announces that, in examining the remainder of the 10,000,000 men subject to draft and service in the national army, information will be sought first as to the liability of each man for service, and the physical examination will follow only when the man is not exempt for some cause under the law.

MEDICAL MEN RETURN FROM FRANCE.—Seven medical officers, fifty-one other men and two nurses reached Fort McHenry, Md., January 25, having returned from medical work with the British army in front line trenches.

DR. J. LEWIS AMETER has been appointed Commissioner of Health of New York City, to succeed Dr. Haven Emerson who has been commissioned major in the Medical Reserve Corps, and has been assigned to duty in the Surgeon-General's Office, Washington.

COL. T. H. GOODWIN, C.M.G., D.S.O., who has been in the United States for several months acting as liaison officer at the Office of the Surgeon-General, has been appointed acting director general of the British Army Medical Service, to succeed Sir Alfred Keogh.

THE AMERICAN RED CROSS has received from Jeremiah Milbank a gift of $50,000, to be used in establishing in New York City a school for disabled and crippled men and for the reeducation of maimed soldiers and sailors. The school will be located at 311 Madison Ave.

DR. EDWARD L. KELLOGG of Gouverneur Hospital, New York City, who was sued for $50,000 damages, in 1910, by William Perlman, who claimed that he lost two toes because of the way in which an operation was conducted, has been acquitted and vindicated by the Supreme Court.

SANATORIUMS FOR THE TREATMENT OF SOLDIERS SUFFERING FROM TUBERCULOSIS are to be established at New Haven, Conn., Otisville, N. Y., and at Whipple Barracks, Prescott, Ariz., in addition to those to be built at Asheville, N. C., and Denver, Colo. It is understood that they will cost about $500,000 each.

COUNCIL ON PHARMACY AND CHEMISTRY.—During January the following articles have been accepted for inclusion with New and Nonofficial Remedies: Chlorazene surgical powder, The Abbott Laboratories; beta-naphthyl salicylate (Calco), Calco Chemical Company; acetylsalicylic acid-Merck, Merck and Company.

ASSISTANT SURGEON-GENERAL W. C. RUCKER of the United States Public Health Service, has been detailed for special temporary duty with the War Department in Europe, both in the British Isles and on the continent, in connection with Maritime Quarantine for the prevention of the introduction of quarantinable diseases into the United States.

NAVY TO CARE FOR WOUNDED.—As the result of an agreement reached by Secretaries Baker and Daniels, Admiral Benson, and Surgeon-General Braisted, the care of sick and wounded soldiers aboard transports returning from France will be undertaken by the Navy Medical Corps, since the Navy already maintains a hospital service aboard such vessels.

BOYS ON EXTRA LUNCHES GAIN WEIGHT.—The twenty-five boys from Public School No. 40, New York City, who are the subject of the experiment being conducted at the Post-Graduate Hospital to determine the value of school lunches, at the end of nine lunches have been weighed and twenty-one show gains. The greatest gain was two pounds and the smallest one ounce. The average gain was three-quarters of a pound each.

PRESERVING VITAL STATISTICS RECORDS.—The bureau of vital statistics of the Buffalo department of health has installed apparatus by which all certificates filed with the bureau are photographically copied and filed for record. The state law requires that the original certificates must be sent to the state department of health. The photographic method eliminates the possibility of error in copying and provides an exact reproduction of the original.

ASK CONGRESS TO RUN QUARANTINE STATION.—Secretary of the Treasury McAdoo has asked Congress for an appropriation of over $1,500,000 for the New York Quarantine Station. Of this sum $1,395,275 is asked for the purpose of purchasing the property of the station and $275,000 is for the purpose of operating the station during 1919. The bill asking this appropriation is accompanied by a statement showing why the federal government should own and operate this quarantine station.

COLORADO PHYSICIAN SENTENCED.—Dr. Albert N. White, Denver, proprietor of the White Cross Sanitarium, charged with the violation of the Harrison Narcotic Law, is said to have been found guilty, January 9, and sentenced to serve two years in the Federal Penitentiary, Leavenworth, Kan., and to pay a fine of $500. The report is that Dr. White pleaded guilty, throwing himself on the mercy of the court, rather than face twelve counts on an indictment returned by the federal grand jury, which sat at Pueblo last fall.

VENEREAL CLINICS.—The Calhoun County (Mich.) Medical Society has decided to operate a free venereal clinic in Battle Creek. The clinic will make a free examination of every person who presents himself for examination, but will not treat persons who are able to pay for treatment. Since November 1 the secretary of the state board of health has been able to secure records of 2,000 cases of venereal disease and an endeavor is being made to trace the source of infection and to intern for treatment the men and women who have the disease.

BANQUET TO DR. STEPHEN SMITH.—A banquet in honor of the ninety-fifth birthday of Dr. Stephen Smith, New York, the "Grand Old Man" of American medicine, was given at the Battle Creek (Mich.) Sanitarium, February 19. Dr. Smith gave a most interesting account of the changes he had witnessed in the methods of his profession. Other speakers were Dr. William A. Evans, Chicago, president of the American Public Health Association; Dr. Henry B. Baker, Ypsilanti, for many years secretary of the Michigan State Board of Health; Col. Cosam J. Bartlett, M.C., U. S. Army, and Major Ernest E. Irons, M.R.C., U. S. Army. About 100 medical officers from Camp Custer were present.

MEDICAL OFFICERS FACE COURT MARTIAL BECAUSE OF SOLDIER'S DEATH.—News despatches from Washington, dated February 23, state that Lieut.-Col. J. H. Allen, M.R.C., and Major Milton Board, M.C., officers at Camp Zachary Taylor, near Louisville, Ky., have been ordered by the War Department to appear before a court martial for trial in connection with the death of Private Otho Murray, a selectman from Cumberland County, Ky. Murray, it was said, was ordered back into training before he had fully recovered from an attack of measles. The case against Lieutenant-Colonel Allen is understood to be based on the technicality that as the superior officer he is responsible for the acts of his subordinates.

Massage Operators Must Be Licensed.—The *Bulletin* of the New York City Health Department calls attention to the fact that few physicians know that there is a city ordinance requiring that every person giving massage treatment, either manual or mechanical, with the exception of physicians, osteopaths and registered nurses, must have a license from the department of licenses. In addition to the license, those giving massage treatment must have a certificate from the health department showing that the applicant is free from communicable disease. Both the license and the health certificate must be shown to any one on demand, and physicians should demand to see both from any one whom they intend to employ to give massage. The ordinance also requires that a massage operator before giving treatment to a patient of the opposite sex in his or her office must receive a written order from the physician, stating the number of treatments to be given, not to exceed ten on any one order.

Pennsylvania's Quota of Babies to Be Saved During Children's Year.—The campaign to save 100,000 lives of babies and young children in the United States during the second year of the war is to be inaugurated by a national weighing and measuring test beginning April 6. In announcing the quotas the Children's Bureau of the U. S. Department of Labor said: "In order that each state may feel responsble for a definite number of lives to be saved, quotas have been assigned to the various states, the apportionment being made on the basis of the population under 5 according to the 1910 census. This of course cannot take account of the varying death rates in the different states where death rates are known." Pennsylvania's quota is 8,318. Announcement of the purpose to wage such campaign was made some time ago and the response, which has surpassed all expectations, indicates that efforts to promote the health and welfare of children are to be more vigorous this year than ever before. This is only one part of the big program for the welfare of 30,000,000 children under 15 in the country. It is realized by all concerned that the standards of child protection must not be relaxed during war time, and the United States is expected to profit by the experience of other warring countries, where the importance of safeguarding childhood is emphasized as never before.

Patriotic Service in Home Fields.—The Council of National Defense authorizes the following statement: For the purpose of completing the mobilization of the entire medical and surgical resources of the country the Council of National Defense has authorized and directed the organization of a Volunteer Medical Service Corps, which is aimed to enlist in the general war-winning program all reputable physicians and surgeons who are not eligible to membership in the Medical Officers' Reserve Corps. It has been recognized always that the medical profession is made up of men whose patriotism is unquestioned and who are eager to serve their country in every way. Slight physical infirmities, or the fact that one is beyond the age limit, 55 years, or the fact that one is needed for essential public or institutional service, while precluding active work in camp or field or hospital in the war zone, should not prevent these patriotic physicians from close relation with governmental needs at this time. It was in Philadelphia that the idea of such an organization was first put forward, Dr. William Duffield Robinson having initiated the movement resulting in the formation last summer of the Senior Military Medical Association, with Dr. W. W. Keen as president, a society which now has 271 members. Conditions of membership are not onerous and are such as any qualified practitioner can readily meet. It is proposed that physicians intending to join shall apply by letter to the secretary of the central governing board, who will send the applicant a printed form, the filling out of which will permit ready classification according to training and experience. The name and data of applicants will be submitted to an executive committee of the state governing board, and the final acceptance to membership will be by the national governing body. An appropriate button or badge is to be adopted as official insignia.

Surgeon-General Gorgas Reports 1,050 Medical Men Dropped Since War Began.—February 26 Surgeon-General Gorgas announced that during the interval elapsing from the declaration of war up to Feb. 23 he had discharged 1,050 officers of the Medical Reserve Corps. The discharges are classified as follows:

Physical disability	411
Inaptitude for the service	154
To join other branches of service	306
Domestic difficulties	59
Resignation	88
Needed by communities, hospitals, schools, etc.	32
Total	1,050

During the same period there have been 2,265 promotions of medical reserve officers, including some officers promoted more than once.

The discharges are in addition to about 4,000 rejections of applicants, 21,740 having been accepted and recommended to the Adjutant-General's Office for commission, and of these 13,687 were on active duty on February 23. The total strength of the Medical Corps on that date is as follows:

Regular Army Medical Corps	768
Medical Reserve Corps	13,687
Medical Corps, National Guard	1,207
Medical Corps, National Army	32
Total	15,694

At the outbreak of the war there were 877 medical officers, 490 regulars, and 387 reserve officers on active duty.

All the physicians and surgeons taken into the Medical Reserve Corps to care for the new armies were chosen by the following plan: (1) All candidates were required to be certified by the American Medical Association as being reputable and in good standing. (2) All candidates were required to be practicing physicians legalized to practice by state laws. They were, therefore, doctors whom any person might have called into his own home when a member of his family was sick. (3) All candidates for the Medical Corps were, prior to their acceptance for service, examined by a board of qualified and especially selected physicians and surgeons. These boards were mostly composed of Medical Reserve Corps officers, who, in some cases, placed too high an estimate on the men they passed upon, hence attention has been given to checking up their work and calling before boards for reexamination all those whose work does not clearly establish their ability to meet the standards set.

During the first six months of war 228 Medical Reserve officers were discharged for all causes. On November 1 the Surgeon-General sent a letter to commanding officers of medical units, calling attention to the War Department's provision for the examination of reserve officers as to "capacity, qualifications, conduct, and efficiency." Since November 1 there have been 822 discharges, and discharges are continuing at the rate of fifty a week. The rate of discharges was again increased by a letter sent by the Surgeon-General on December 14 to department and division surgeons and commanding officers of hospitals outlining action to weed out incompetents by (a) psychological examination for mental capacity; (b) transfer of those unsatisfactory in their present work to other duties—to work involving no care of the sick for those who had been found unsatisfactory in that branch; (c) further instruction for those needing it, and (d) elimination from the service of "men who by reason of physical or mental incapacity, viciousness, or laziness cannot be made competent officers."

BULLETIN EXCERPTS

WEEKLY BULLETIN, ALLEGHENY

Pneumonia: The Prepneumonic Stage

In the bulletin of Feb. 3, 1917, under the caption, "Mortality of Pneumonia in Hospitals," I tried to call attention to the fact that pneumonia has a prepneumonic stage in which the disease is curable, and now, a year later, I wish to emphasize the same claim. It often happens that a year after one has made a statement, with new light and broader experience, one may wish that he had been less positive, but in the present case my conviction is greater than it was a year ago. As I write these lines the thought occurs to me that what I am about to say is a mere platitude, that every physician, medical student and nurse knows what the prepneumonic stage is and what danger it portends. Perhaps they do, but the morbidity and mortality rates in civil and military life clearly show that we are not acting according to such knowledge.

I will again enumerate the leading symptoms of the prepneumonic stage of pneumonia: Inflammation of the upper respiratory tract, such as rhinitis, pharyngitis, tonsillitis, bronchitis; a state of depressed circulation in which the patient complains of cold hands and feet, shivering, chilliness or an actual chill, malaise, muscular pains, subnormal or a slight temperature, small pulse, low blood pressure, and later congestion of the most dependent portion of the lungs. That the depressed circulation which permits a hypostatic congestion is an etiologic factor in the pathologic physiology of pneumonia, is evidenced by the fact that when statistics of pneumonia have been gathered, it has always been found that the lower lobes of the lung are the ones most frequently involved and the right more frequently than the left. So much for the mechanical factor. Valentine, in the January, 1918, number of the *Journal of Experimental Medicine,* reports finding pneumococcus Type 1 in cases of acute rhinitis. We may well expect similar reports in the future, knowing that there are many carriers of pneumococcus.

Clinical experience has shown us that the patient with the so-called "cold" is easily cured, that rest in bed, equalizing the circulation, and application of the usual remedies, will bring about an early recovery. What may we adduce from these facts? Treat the patient in the prepneumonic stage. Tell the patient with the so-called "cold" that he is a candidate for pneumonia and he will go to bed. If you are an authority order him to bed for three or four days until his temperature and pulse and general condition are normal. Therefore the aphorism, "If colds were cured pneumonia would be a rare disease."—Joseph H. Barach.

MEDICAL MONTHLY, BERKS

Swat the Fly

After a hard day's work I sat in my easy chair and read what Dixon and Krusen proposed to do to eradicate that pest to humanity, the fly. But in spite of the efforts made to keep awake sleep mastered, and while I slept I had a dream: A beautiful fly with thousands of eyes stood before me, and the following conversation ensued. I said:

Why don't you die?
Naughty little fly,
You get in my eye;
You get in my pie;
You make me cry.
Nasty little fly,
Why don't you die?

And the answer was this:

I very much want to live, and then to see
What Dixon and Krusen will do to me.
To enjoy the hunt of the fly-killing squad,
To hide in a dark corner and sleep and nod;
To raise a family so slick and keen,
They'll think we're gone, because not seen.
And when the weather is murky and hot,
We'll all get out on the vacant lot
Where offal is thrown to fester and rot.
Then we'll fly around, first in, then out,
To infect the food and persons about:
So they may die,
And not the fly.

And when I awoke the trueness of the dream appalled me; the full purpose of their existence was known. We must join the fly-killing squad and "swat the fly," for their victims many times outnumber the deaths and injuries on the bloody battlefields of the world.

BULLETIN, CLEARFIELD

Wake Up

It always seems that a good start augurs well for any enterprise and this year the county societies more than ever before need the hearty support and cooperation of every member in order to make up for the loss of those noble fellows who have gone to care for the boys who are offering their lives on the altar of liberty. They shall preserve the dignity of the American profession by their noble acts abroad; let us then preserve the dignity of the profession by our noble acts at home and at the same time let us keep the camp fires burning so that when they return as we pray God they may, they will not find us asleep at the post of duty but in action preserving not only life but also the noble institutions which they have helped to found and have fought to preserve. Let us each resolve to commit ourselves more than ever loyally to the tasks before us this year and let us put our whole energy into the work of our county medical societies doing the bit which may be assigned to us with a vim that is unusual, for during this year the unusual is what is expected of us and the county society has as much right to exact the unusual of us as any other organization; it becomes our patriotic duty not to be found wanting in any particular.

BULLETIN, ERIE

The matter of taking care of any need that might arise in the families of our absent colleagues was finally adjusted at the last meeting. Below is printed a report of the action from the pen of Dr. Barkey.

At the February meeting the first recommendation only was approved by the society, as follows: "The appointment of Drs. Barkey, Silliman and D. H. Strickland as a relief committee to serve for the duration of the war. The purpose of this committee is to search out all cases of financial need arising in the families of members of this society absent on government service and to distribute the committee's funds according to the committee's discretion. The committee's activities are to be confidential and no detailed record of their disbursements shall be required. A general report, however, shall be made at each annual meeting or oftener should the society require."

The following agreement was signed by the members present:

"We, the undersigned physicians, members of the Erie County Medical Society, agree to pay the sum set opposite our respective names for the purpose of creating a medical relief fund to be used in meeting any emergency that may arise in the families of medical men who have enlisted in the defense of our country, or in other needy cases of members of the society."

Eighteen members subscribed $10 and three members $25.

And it was further agreed that a check for not less than $10 be sent promptly to the chairman of the committee, Dr. Peter Barkey, by each member of the society not in actual service of the United States Army. An account has been opened in the Marine National Bank where the checks will be deposited as they are received. No receipts will be issued as each check will function as a receipt as soon as endorsed and deposited.

BULLETIN, LAWRENCE

The little squib in the last Bulletin about certificates being furnished to inmates of disorderly houses revealed the fact that more than one of our members had done so. Conversation with one who had given a certificate, revealed the fact that it had been done thoughtlessly, and without due consideration of the conditions and results. These certificates should not be given. There are many reasons, but especially two: First, the certificate is worthless, for exposure is so frequent that even if no disease were found at the time of examination, subsequent exposure would contaminate the subject and render her infectious. Second, certificates give a false sense of security to patrons and make it seem that the medical profession sanctions such practices. Do not give these certificates if you want to preserve a good name for yourself and the profession.

BULLETIN, MONTGOMERY

Physician Imprisoned in Germany for Publishing Book

According to the *Progres médical* of Paris, Professor Nicolai of Berlin has been imprisoned. It says:

"The correspondent of the *Observer* at Berne announces that Prof. G. F. Nicolai, formerly physician to the imperial family, and professor of physiology at the University of Berlin, has just been condemned to imprisonment in a fortress and his property confiscated.

"This measure was taken in consequence of the publication of a book entitled 'The Biology of War,' in which Professor Nicolai pointed out the warping of the conceptions of German scientists and military men in the course of the hostilities. Among other things, he said:

"The military personage who is numbered among the most prominent, but whose name I shall not mention, inquired of me whether it might not be possible to fix shells with cholera germs or plague bacilli so that the shells could be sent back of the front firing line.

"As I replied to him that I did not think it would do to use procedures so lacking in humanity, he answered me in a tone tinged with contempt, 'Humanity is not to be considered in this war, and Germany has a right to do everything she pleases.'"

"Professor Nicolai added that in Germany millions of people are reasoning the same way as this man, who in other ways has manifested marked superiority of character. Others, he continues, have even more cruel ideas. He describes how a medical officer on the general staff inquired of him whether it would not be possible to inoculate the Russians with bacteria, saying, With such cattle, everything is legitimate.'"

The *Progres médical* of a later date goes on to relate that Professor Nicolai, author of the book "Biology of War" has been condemned to five months imprisonment by the court at Danzig for "refusal of civilian service." It adds, "We recall that Professor Nicolai refused energetically to have anything to do with making of bombshells to contain the germs of cholera or plague bacilli, and to inoculate Russian prisoners with bacteria."

WEEKLY ROSTER, PHILADELPHIA

What Becomes of the Collected Accounts?

From time to time it has been brought to the attention of the editor that some of the physicians in camp are receiving scant courtesy in the way of money from home. Some have complained that, though they have been away for several months, fees for only one or two visits have been sent them. This seems odd after the declaration of the members of the county society to look after the practices of the absent members; it should be understood that this means not only seeing the patient but also the collection of the bill, and at intervals forwarding the due portion of it either to the physician or to his family. It may be possible the idea prevails that, with the princely salary of a commissioned officer, a check for one or two hundred a month from his practice would be considered as not worth while. But as the salary is not all clear profit it is believed that checks for any amount would be gladly received; these should be sent promptly and not held, as some think proper, until the return of the doctor to civil life. That these remittances are worth while will be seen from a letter of a physician now on duty to his county medical society (Clearfield County *Bulletin*) in which he says:

"I cannot thank you in words for what you are doing for me; I received a letter yesterday from my wife giving me the amounts that had been deposited to her account and her letter was full of gratitude and admiration for the doctors of Clearfield. I am sure you do not fully realize what a satisfaction your generous action and brotherly spirit means to us; it cheers me in my work and makes me so thankful that my home is in the midst of men who take an interest in me and mine and have absolutely no mercenary spirit."

It is quite probable that there are some of our own society members whose heart would be rendered glad by similar treatment. If there are any here who are still deliberating over sending the agreed-on portion of the amount collected, this deliberation should cease as early as possible and give way to action; let us, as far as can be done, close up the business of 1917 and start the new year with a clean slate.

Why Physicians Should Join the County Medical Society

Every reputable physician in the city of Philadelphia should be a member of the county medical society; it is the unit of the state and national organizations—the Medical Society of the State of Pennsylvania and the American Medical Association—and represents the scientific and fraternal spirit of the profession in the broadest and highest sense. The aims for which the medical profession is striving—improvement in the hygienic and sociologic conditions of the people, and the scientific and material status of physicians—can be achieved only by united effort. Our influence as a society is in large measure in proportion to our numeric strength. A physician working individually can do much good; but he will accomplish far more if he adds his strength and influence to those of his colleagues. From this point of view, it is every man's duty to join the county society if his professional reputation is such as to entitle him to membership therein. Among the many important subjects at this time under discussion by the society, with a view to reform, the following may be mentioned: Abortionists, illegal practitioners, newspaper advertising by physicians, medical charities abuse, nostrum prescribing, division of fees, questionable modes of practice, unjust fee-cutting, club practice abuse. No respectable physician having the good of the profession and the welfare of the public at heart can be indifferent to these matters.

COMMUNICATIONS

IS THE WORKMEN'S COMPENSATION LAW SATISFACTORY?

Olyphant, Pa., Feb. 25, 1918.

Dear Doctor:—An opportunity is offered to present to the Conference of Industrial Physicians and Surgeons of Pennsylvania a consensus of opinion relative to the Workmen's Compensation Law as applied in its medical provisions. I would thank you very much if you would answer the following questions:

Are you satisfied with the present law as it applies to the surgeons under the Workmen's Compensation Act?

What amendments would you offer relative to the amount of compensation for minor and major operations?

Are the amounts of $25 and $75 sufficient? If not, what in your estimation should be sufficient?

Are you satisfied with the waiting period, namely, the treatment of the patient for fourteen days, or would you consider the time needed to be extended, and if so, what length?

Any further recommendations or suggestions that may be used to frame amendments to this bill will be thankfully received. No names will be used as reference, but the compilation will be for the purpose of bringing out the important facts relative to the law and such suggestions as may be made to the legislature of 1919.

Thanking you for your kind cooperation, I remain,

Very truly yours,

Dr. F. L. Van Sickle.

JOURNAL GOES TO MEMBERS IN SERVICE

..............Pa., Jan. 17, 1918.

Pennsylvania Medical Journal,
Athens, Pa.

My Dear Sirs:—Will you please change the address of Dr.......... to ....Pa. Dr.......... is now with the A. E. F. in France and I would like to forward The Journal together with other magazines every month. Thanking you, I am,

Very respectfully,

Mrs......................

Athens, Pa., Jan. 21, 1918.

Mrs.................
....

My Dear Mrs..........: Thank you for yours of January 17th. The Journal is forwarded to all members of the society who are in the service when the address of the same is furnished this office, and changed as occasion requires. Probably this will be more satisfactory than sending The Journal to you to be forwarded to your husband. If you will send us your husband's full military address we will forward The Journal to him, or we will send it to you if you so prefer.

Faithfully yours,

C. L. Stevens, Editor.

..............Pa., Jan. 24, 1918.

Pennsylvania Medical Journal,
Athens, Pa.

My Dear Dr. Stevens:—Your kind letter carefully noted and I sincerely thank you for your kind suggestions, but I prefer having Journal mailed to .... as I derive so much valued information concerning the medical men in the service from Dr........'s journals. I believe next to Dr........ I would miss the Pennsylvania Medical Journal second. Thanking you, I am,

Very respectfully,

Mrs......................

BOOKS RECEIVED

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

Typhoid Fever. Considered as a Problem of Scientific Medicine. By Frederick P. Gay, Professor of Pathology in the University of California. New York: The Macmillan Company, 1918. Price $2.50.

A Clinical Manual of Mental Diseases. By Francis X. Dercum, M.D., Ph.D., Professor of Nervous and Mental Diseases, Jefferson Medical College, Philadelphia. Second Edition Revised. Octavo of 497 pages. Philadelphia and London: W. B. Saunders Company, 1917. Cloth, $3.50 net.

Blood Transfusion Hemorrhage and the Anemias. By Bertram M. Bernheim, A.B., M.D., F.A.C.G., Instructor in Clinical Surgery, the Johns Hopkins University; Captain, Medical Officers' Reserve Corps, U. S. Army; Author of "Surgery of the Vascular System," etc. Philadelphia and London: J. B. Lippincott Company. Price, $4.00.

The Spleen and Anemia. Experimental and Clinical Studies. By Richard Mills Pearce, M.D., Sc.D., Professor of Research Medicine. With the assistance of Edward Bell Krumbhaar, M.D., Ph.D., Assistant Professor of Research Medicine, and Charles Harrison Frazier, M.D., Sc.D., Professor of Clinical Surgery, University of Pennsylvania. 16 illustrations, color and black and white. Philadelphia and London: J. B. Lippincott Company. Price, $5.00.

BOOK REVIEWS

THE THIRD GREAT PLAGUE. A Discussion of Syphilis for Everyday People. By John H. Stokes, A.B., M.D., Chief of the Section of Dermatology and Syphilology, the Mayo Clinic, Rochester, Minn. 12mo, pages 204. Philadelphia and London: W. B. Saunders Company, 1917. Cloth, $1.50 net.

This little volume has been written for the purpose of acquainting the layman with the advances in knowledge of one of the great plagues with which the world has at present to contend. The other two, tuberculosis and cancer, are gradually coming under control through diffusion of just such knowledge, and as much may be expected of the third, namely syphilis. By reason of the circumstances attending its transmission, the last-named disease has long been considered not a subject for polite discussion, but with this barrier gradually disappearing there is already evidence that a great step forward has been taken in recent years in its prevention, as well as in its rational and scientific treatment. Dr. Stokes in the twenty chapters of his monograph discusses consecutively the history of syphilis, the disease as a social problem, its nature and course, the Wassermann reaction, the treatment of the disease, the question of its cure, the hereditary form of the disorder, the mode of transmission and the hygiene, mental attitudes in their relation to syphilis, moral and personal prophylaxis and public effort against the disease. The book is timely and its subject matter is presented in a temperate and convincing manner. It should admirably subserve the purpose for which it has been written and it is deserving of a wide distribution and a careful reading. E.

TUMORS OF THE NERVUS ACUSTICUS AND THE SYNDROME OF THE CEREBELLOPONTILE ANGLE. By Harvey Cushing, M.D., Professor of Surgery at Harvard University. Octavo, pages viii, 296. Illustrated. Philadelphia and London: W. B. Saunders Company, 1917. Cloth, $5.00 net.

This monograph of Dr. Cushing's is peculiarly valuable by reason of the thorough study of a large mass of material, clinical and pathological, acquired in the course of an extended surgical experience. Dr. Cushing is in the fortunate position of being able to form his judgments from both a neurological and a surgical standpoint, with the result that he has been able to proceed in his work with an assurance that would otherwise be wanting. In this volume are presented the results of a careful analysis of twenty-nine histologically certified cases of tumor of the acoustic nerve, together with a much larger number of probable though unverified ones. The text comprises ten chapters. In the first, following a brief introduction, is given an historical review of the subject. In Chapter 2 is considered the clinical material on which the study is based and its source. Chapters 3 and 4 are devoted to the recital of individual cases. Chapter 5 deals with the etiology and incidence of the growths, Chaper 6 with the symptomatology, Chapter 7 with the pathological anatomy. Chapter 8 is devoted to a consideration of bilateral tumors and generalized neurofibromatosis, with a discussion of the relation of acoustic tumors to meningeal endotheliomata. Chapter 9 takes up the question of diagnosis, Chapter 10 that of surgical treatment. The work concludes with an extensive bibliography and an index of authors and one of subjects. The exposition is an admirable one from every standpoint and is to be accepted as an authoritative expression of our present knowledge of the subject at the hands of a careful observer, an exact clinician and a skilled operator. Deserved praise can be given to the mechanical execution of the book, which is printed in large type on heavy paper and is provided with 262 illustrations of the highest character. E.

ENCYCLOPEDIA MEDICA. Under the General Editorship of J. W. Ballantyne, M.D., C.M., F.R.C.P.E., Physician, Edinburgh Royal Maternity Hospital, formerly Lecturer on Antenatal Pathology and Teratology in the University of Edinburgh. Second Edition. New York: The Macmillan Company. Cloth, $6.00 per volume.

This work will probably consist of fifteen volumes. The first two volumes were delivered in 1915, and reviewed in the December issue of The Journal. Volumes III and IV appeared in 1916, and Volume V in 1917.

Volume III begins with a new article of 32 pages on chloroform, by the late Donald C. A. M'Allum, M.B., C.M., Anesthetist, Royal Hospital for Sick Children and Chalmers Hospital, Edinburgh, and Instructor in Anesthesia, Royal Infirmary, Edinburgh; with a historical introduction by Sir Alexander R. Simpson, Emeritus Professor of Midwifery in the University of Edinburgh.

Another new article is on legislation for mental deficiency, which occupies 6 pages. Among articles to be especially commended are those on deformities, 60 pages; diabetes mellitus, 39 pages; and diphtheria, 30 pages. The volume closes with a rewritten article of 9 pages on dyspnea, by Harry Rainy, M.A., M.D., F.R.C.P. Many chemical, botanical and surgical terms are omitted, and yet three hundred separate subjects are considered in this volume, not counting subheads. For example, under the word disease is given a table containing 103 diseases known by the name of the medical man first describing the malady, nor does this number of diseases include synonyms, the counting of which would nearly double the list. A few words like consciousness and contagion are not found, but probably they are considered in other volumes under a different heading.

The illustrations add much to the value of many of the articles; those on chlorosis, cholera, color vision, dermatitis, diphtheria and drug eruptions are in colors.

Volume IV begins with ten separate articles on the ear, covering 172 pages. One (otosclerosis) is a new article. Four are revised and five are rewritten. A new article of 21 pages on eclampsia and the pre-eclamptic state, by the editor, is worthy of consideration. In speaking of the treatment of the pre-eclamptic state that author says: "One can promise much if a patient suffering from a prodromata of eclampsia can be brought under the influence of all the therapeutic means now at the disposal of maternity hospitals and prematernity wards." In discussing the treatment of eclampsia he says that it may be "(1) mainly medical; (2) chiefly obstetrical; (3) in part surgical; or (4) a combination of the various plans." In speaking of cesarean section he is less hopeful than some of our American obstetricians, as he thinks that "results have not justified expectations."

The article on enzymes is rewritten by R. Tanner Hewlett, M.D., F.R.C.P., D.P.H.R.C.P.S., Professor of Bacteriology, University of London, and covers 22 pages. A new article on eugenics covers 19 pages. The volume ends with a revised article of 24 pages on filariasis.

Volume V begins with a 10-page article on fingers, followed by a new article of 23 pages on first aid, written by H. L. Watson Wemyss, M.D., F.R.C.P., Medical Officer in charge of Dalmeny House Military Hospital. A new article by the editor on the development, anatomy and physiology of the fetus, covers 60 pages. Another new article by the editor on diagnosis in gynecology, covers 23 pages. The article on fractures (not including fractures in and near joints) is written and revised by D'Arcy Power, B.A., M.A., M.B., F.R.C.S., Surgeon and Lecturer on Surgery, St. Bartholomew's Hospital, London. Two hundred pages are given to seven separate articles on the heart, with which the volume ends. Examination of the heart by graphic methods is a new article by G. Douglas Mathewson, B.Sc., M.B., Ch.B., F.R.C.P., Assistant Physician, Leigh Hospital.

A PRACTICAL TEXTBOOK OF INFECTION, IMMUNITY AND SPECIFIC THERAPY.

With special reference to immunologic technic. By John A. Kolmer, M.D., Dr.P.H., M.Sc., Assistant Professor of Experimental Pathology, University of Pennsylvania, with an introduction by Allen J. Smith, M.D., Professor of Pathology, University of Pennsylvania. Second edition, thoroughly revised. Octavo pp. viii, 978. With 147 original illustrations, 46 in colors. Philadelphia and London: W. B. Saunders Company, 1917. Cloth, $7.00 net; Half Morocco, $8.50 net.

That some diseases are transmissible has long been recognized, but the explanation of the fact came only with a knowledge that these diseases are due to the activity of micro-organisms capable, under proper conditions, of indefinite multiplication. Of individuals exposed to a given infection it was observed that some escaped, and investigation into the causes of such immunity elicited knowledge of protective and defensive mechanisms, inherent or acquired, on the part of the living body. Further, termination of diseases by self-limitation naturally led to inquiry as to the processes by which such a result is brought about. If diseases can thus be averted or terminated by natural means it was logically reasoned that they might be prevented or brought to an end by artificial imitation or substitution. The various phases of these several subjects, so intimately related, are discussed in a most thorough and comprehensive manner in this volume by Dr. Kolmer, with the clarity and directness born of original investigation and an extended experience in laboratory and class room.

The text is divided into five parts, the first of which deals with general immunologic technic under the following subdivisions: general technic, methods of obtaining human and animal blood, technic of animal inoculation, methods of effecting active immunization of animals, preservation of serums. Part II considers the principles of infection; Part III, the principles of immunity and special immunologic technic in the following order: immunity, theories of immunity, various types of immunity, phagocytosis, opsonins, opsonic index, bacterial vaccines, antitoxins, precipitins, cytolysins, amboceptors and complements, bacteriolysins, hemolysins, venom hemolysis, principles of the phenomenon of complement fixation, technic of complement fixation reactions, cytotoxins, the relation of colloids and lipoids to immunity, anaphylaxis. Part IV discusses applied immunity in the prophylaxis, diagnosis and treatment of disease—specific therapy, with subheadings as follows: Anaphylaxis in its relation to infection and immunity, anaphylactic or allergic reactions, active immunization, vaccines in the prophylaxis of disease, vaccine therapy, passive immunization, serums in the prophylaxis and treatment of disease, serum therapy, chemotherapy. Part V takes up experimental infection and immunity, and is given over largely to exercises to be carried out in the laboratory. There is an index of 34 pages. The book is well calculated to fulfil the purposes for which it has been written, namely to reflect existing knowledge on the subjects of infection and immunity, with a view to the practical application of that knowledge to the diagnosis, prevention and treatment of disease; to provide laboratory workers with a guide to the various immunologic methods; and to outline a laboratory course in experimental infection and immunity. Dr. Kolmer is to be congratulated on the success of his undertaking and the need for this second edition so soon after the appearance of the first must be accepted as a sign that the book has been accorded the welcome it so warmly deserves. The volume is well printed in large, legible type, and it is generously and well illustrated. E.

AMERICAN ADDRESSES ON WAR SURGERY.

By Sir Berkeley Moynihan, C.B., Temporary Colonel A.M.S., etc. 12mo of 143 pages. Philadelphia: W. B. Saunders Company, 1917. Cloth, $1.75 net.

Moynihan has given American surgeons two vitally important precepts by which he will be long remembered in America. A few short years ago he came to the United States as a guest of the American Surgical Association. His advent was as modest as that of a certain Mr. Joseph Lister who came to Philadelphia in 1876 as a British guest of the International Medical Congress of the centennial celebration. Both these rising men impressed the surgical profession of this country with their earnestness in advocating a personal surgical opinion. Lister spoke of his belief in the possibility of preventing septic conditions in wounds. Moynihan told us that in Leeds after abdominal operations a pitcher of drinking water was set on the table close to the bedside of each patient. These words struck many Americans as revolutionary.

When Lister made a later visit to America as the Lord Lister of world fame, his view as to the prevention of septic deaths had been universally accepted. Sir Berkeley Moynihan's return has brought a gospel of the treatment of gunshot wounds second only in importance to Lister's doctrine as to the prevention of septic wounds.

There has been something so similar in the relation of these two men to America that the reviewer of Moynihan's book with the title given above cannot resist giving it attention.

The beauty of the little volume's literary style, the strength of its convictions, and the lovable character of its author make the five addresses noteworthy. They teach the new surgery of the 20th century with the same preciseness, clearness, and convincing pressure as did the early papers and subsequent career of Lister.

Perhaps the most important part of the book is contained in the address on the Principles and Methods of Treatment of Gunshot Wounds. Under the heading Primary Closure, he says, "It is now the common practice to excise freely all damaged and dead tissue if possible in one piece." This is to be done "in the early hours, during the period of 'contamination.'" He describes the operative technic. It requires skill and practice to do the excision well. It consists in the removal of the track of the missile after careful preparation of the skin and the parts all around the wound in the manner recognized as necessary in operative procedures on an unwounded surface. The gunshot wound is excised together with a wall not less than one-third inch around it. This should be done in one piece, just as skilful surgery removes a malignant growth.

The original wound may be stained by a brilliant green dye applied to the raw surface in a thorough manner for not less than two minutes. This staining indicates the tissues that ought to be cut away. If excision is contraindicated in isolated spots, a mechanical cleansing of exceedingly careful thoroughness must be applied in those stained regions. The walls of the wound left after the removal of the contaminated tissue should bleed everywhere. Then perfect hemostasis should be secured. Instruments, rubber gloves and articles that have come in contact with the wound in the removal of contaminated structures should be discarded and the wound stitched up without drainage. Success in obtaining primary union after such one-piece removal of contaminated tissue may be expected in perhaps 80 per cent. of cases. Failure occurs often because of piecemeal removal of the infected wall permitting frequent "recontamination" of the newly made raw surface. Injudicious closure of wounds already septic from vicious infections will undoubtedly lead to great morbidity and mortality. Contamination may exist, however, for a number of hours before infection from the contaminating substance actually occurs. Thus is it that immediate excision of the contaminated wall of gunshot wounds is the keynote to succcess following the primary closure.

Moynihan's book should be read by every American surgeon. It records many men's contributions to the recent development of scientific surgical therapeutics. It is written by one whose keenness of observation and facility of diction claim instant attention. It reminds the reviewer of an incidental dinner conversation years ago, at which Moynihan said, "The physicians of Leeds do not know typhoid fever. Leeds has a good water supply." J. B. R.

SOCIETIES

PHILADELPHIA LARYNGOLOGICAL SOCIETY

Meeting of January 8, at College of Physicians

Internal Anatomy of the Face and Its Associated Parts. Mathew H. Cryer, M.D., D.D.S., by invitation, demonstrated very clearly and elaborately the relation of the sinuses to each other and to the teeth and advocated the dental route for drainage of the antrum. Dr. Cryer displayed a large assortment of abnormal sinuses, large as well as small maxillary and frontal sinuses.

Dental Pathology with Especial Reference to Diseases of the Nose, Throat and Ear. W. Sterling Hewitt, D.D.S., by invitation, presented this subject. He stated that the pathology was no different from pathology elsewhere in the body, but emphasized a thorough study of the teeth when diagnosing conditions of the nose and throat; also, that the roentgen ray is too often neglected.

Herman B. Cohen, Reporter.

PITTSBURGH ACADEMY OF MEDICINE

Meeting of January 29

Empyema. Dr. J. W. Dixon: The future health of the empyema patient depends more on an early diagnosis than on the type of operation performed. If the chest be drained early, the lung will subsequently approach normal in a way that would not seem possible at the time of operation. If a massive empyema be allowed to compress the lung for weeks and a thickened leather-like pleura further immobilize it, it matters little what type of operation be performed, the lung will never expand to fill the pleural cavity.

Nevertheless an early diagnosis is not always easy. There are peculiarities in the acoustics of a child's chest that we do not understand and often forget. Tubular breathing is frequently heard over massive empyemas in a child and occasionally in an adult. The heart is easily displaced in a child's chest and may be an aid in diagnosis. Since we know that empyema very frequently follows pneumonia in a child, one should immediately be suspicious of a persistent temperature past the usual time of an ordinary case of pneumonia. Pleural effusions occur once in every nine cases of pneumonia in a child and have a marked tendency to become purulent the younger the child (Dunlap). A massive empyema in an adult has no difficulties of diagnosis beyond those of an ordinary routine examination. Small or encapsulated empyemas are often extremely difficult to detect. Large quantities of fluid may be encysted, thus preventing the eliciting of movable dulness. Many adhesions, with great thickening of pleura, add greatly to the difficulties of diagnosis. Especially in long standing empyemas, the appearance of the chest is suggestive. The shoulder is depressed, there is partial immobility especially of the lower chest, the spine is curved to the opposite side. The roentgen ray is of great value, especially if the pus be encapsulated. The diagnosis is not complete until paracentesis is done. Accidents have been reported from the use of the aspirating needle, but they are so rare that one should not hesitate to use it. An accurate diagnosis cannot otherwise be reached. The fluid should be examined for specific gravity, cell count, differential cell count and culture.

A perfectly clear straw-colored fluid with a specific gravity of 1.018 or more, and a high leukocyte count is an exudate, although it may have all the appearances of the transudate, and the chest should be drained. Subsequent paracentesis on such a chest will almost certainly show pus. My worst functional result was such a case in which I failed to be guided by my findings.

The differential cell count may be of great value according to Widal and Ravant who have worked out the cellular formula for different types of exudate. The tubercular formula interests us most, since it is generally conceded that to open and drain a tubercular pleura is bad practice. Also the diagnosis of a tubercular pleura by physical examination is frequently impossible. They have found that in tubercular exudate lymphocytes strongly predominate, especially so before there is any secondary infection. A sterile culture or a hemorrhagic exudate are further suggestive of tuberculosis.

The treatment of empyema (excepting tubercular) is drainage of the pleura, as soon as the diagnosis is made. The one possible exception that I can see, is a child with a markedly misplaced heart: in which case the pleura had better be aspirated to allow the heart to return to its normal position and regain its tone. (Ecker's case.)

Thoracotomy with rib resection is usually the operation of choice. Many different kinds of vacuum apparatus have been devised to hasten the return of the pleura to its normal state—minus pressure. Most of these are cumbersome or impractical. The one that appeals to me most because of its simplicity, is that devised by Rosenthal. Through specially made cannula he introduces a long rubber tube into the chest. The lower end of the tube is cut at a long angle and over this end is placed a collapsible rubber tube slightly longer than the long tube. This acts as an obturator to prevent the patient drawing air into the pleural cavity.

All kinds of irrigations and injections into the pleural cavity have seemed to me objectionable. However, it is probably justifiable in tubercular empyemas which should not be opened because it will never close; also the fluid in the pleural cavity, by holding the tubercular lung as in a splint, helps to prevent the spread of the disease. In such cases the irrigation by normal salt as practiced by A. H. Gawin, is certainly more promising than rib resection. He washes out the pleural cavity with large quantities of normal salt solution, using two needles and keeping the pleura in perfect balance. He continues this until the fluid returns clear and repeats the process in three weeks.

The cases I have to report were all treated by thoracotomy with rib resection. With one exception, they were all operated on with local anesthesia. As early as possible, lung exercises were begun, in the older patients.

Summary: Youngest, 2 years, oldest, 62 years; fourteen were children, twelve under their teens. There were three deaths in hospital, one in five days, one in fifty days (pericarditis and encapsulated abscess), one in sixty days. One death in one month after leaving hospital (double), one death in two and three-fourths years after leaving hospital (T. B.). Shortest convalescence twenty days; longest convalescence, 147 days. One was following osteomyelitis, one following pleurisy, remainder following pneumonia; ten on right side, fourteen on left, one double. The shortest drainage time was eight days, longest 147 days. Temperature was normal in one case on third day, one case on fifth day, up to 146 days septic temperature. Two cases developed four months after pneumonia. Subsequent health was good in all but one case. Mortality was 12 per cent.

Dr. J. K. Everhardt, in discussing, emphasized the importance of repeated paracenteses, stating that often pus is not found at the first aspiration and then only a small pocket found, others still existing. He illustrated with two case histories where the pocket of pus was found high up in midscapular region.

Dr. T. G. Simonton wished to know if any had pain over tip of acromion process. In cases of septic peritonitis, pleurisy, pneumonia, empyema he has frequently seen pain over tip of acromion process, probably due to anastomosis of the phrenic and intercostal nerves with the first dorsal and cervical. He wished to know Dr. Dixon's experience with Dakin's solution in empyema and added that he had seen a case irrigated with Dakin's solution in which the pus disappeared in two weeks and then drained serum for a time and healed. In exploring he believes that one should go over maximum dulness and where râles are most superficial; further that one should wait before draining an empyema until it is well walled off to prevent prolonged drainage subsequent to operation.

Dr. Cohoe stated that if the crisis is delayed ten to twelve days one should think of delayed resolution, empyema or mistaken diagnosis. He believes that tubercular empyema or pleurisy should be left alone when possible.

Dr. Dixon has never observed pain at the tip of acromion process. He used Dakin's solution once and the patient did well but he has never had the courage to try it again.

Epilepsy, with Case Histories. Dr. T. E. McMurray: I wish to report my observations on several cases of epilepsy which are interesting. In three of these cases I will go into detail.

The enormous appetite should receive special attention. There is no doubt these patients eat entirely too much and the appetite must be curbed. I have seen these patients eat until it would seem impossible for them to swallow another mouthful, but they would continue as long as the food lasted or until forbidden more. Any article of food seems acceptable but in the cases which I have been privileged to observe, carbohydrates seemed most desired.

This overeating causes gastro-intestinal disturbances, such as the coated tongue, foul breath, constipation or diarrhea and headache. Intestinal autointoxication is the result and a vicious circle is established. Whether the intoxication is the cause or result of the depressed mental condition is a question. Although it has not been proved that epilepsy is due to gastrointestinal intoxication it is increasingly probable that some obscure poison or poisons generated in and absorbed from the intestinal tract are responsible for a number of cases.

To me the seizures of epilepsy always resemble the working of a gas engine. It requires a certain length of time to accumulate enough force to cause an explosion and when that force is spent the process begins all over again. In some cases the poison is generated more rapidly than in others and consequently the seizures were frequent or infrequent as the case might be. We know there are patients who have an idiosyncrasy to certain foods and the elimination of the offending article from the diet will bring results.

Fortunately we are helped in our efforts by the various skin tests which are now available and which no doubt will greatly assist us to classify those cases of epilepsy which arise from the gastro-intestinal tract.

In the cases which I will report there is no doubt the seizures were influenced by the amount of carbohydrates in the diet.

Cushing in his investigations teaches us that the carbohydrate tolerance is influenced by the pituitary gland. If such is the case, why is it not logical to combine pituitary feeding with a graduated carbohydrate diet in cases where we have evidence shown of hypopituitarism either clinically or by the roentgenologist?

Case 1.—Female aged 30. Past history negative. Seizures began at 12. Tonsils and adenoids were removed at 15. Both ovaries and uterus removed at 26. Had received bromids, etc., during all these years, but in spite of treatment and operations the seizures continued on an average of from three to five a month. I saw her first in April, 1917. She showed a normal blood picture. Blood and spinal fluid Wassermann tests were negative. Normal urine and slight gastric hyperacidity. The roentgen-ray report was hypopituitarism with sclerosed right mastoid. Treatment consisted of a standard strict diabetic diet for a month and during that month she had one attack, six days after starting treatment. Diet gradually increased until she was receiving a diet of about 15 per cent. carbohydrates (the amount being in proportion to her weight), when she had two seizures. She was then placed on starvation treatment for three days when her diet was increased together with pituitary gland. She is now on a free diet with the exception of those foods forbidden to diabetics, such as sugar, candy, pastry, etc. She is allowed three slices of white bread or three rolls daily. Last attack was on Aug. 16, 1917.

Case 2.—Male aged 8 years. Convulsions began at 4, two or three a week. Diet began in November, 1915. He had two attacks in December, 1915, one in January, 1916, and none to date. Diet has been increased until he is on a free diet excepting candy, etc. Roentgen ray in this case showed no change in pituitary fossa.

Case 3.—Female aged 24. Attacks began at 18, three months after securing a position in a bakery where she ate freely of candy and cakes. Attacks followed rapidly for several weeks when they were controlled by bromids for about two months. Seizures recurred until Jan. 2, 1915. Diet began on Dec. 18, 1914. At this time she was taking 90 grains of bromids in twenty-four hours. This was cut to 45 grains when she began the diet. Attacks continued at longer intervals until March, 1915, when they ceased until July 7, 1915. She had attacks July 7, 8, 13 and 21, following a picnic on July 4, when she had eaten freely of the usual picnic food. Diet was cut, but no bromids given as she had been off the bromids since May. Diet gradually increased. No attacks since July, 1915. This case showed no change in pituitary fossa.

In dicussing, Dr. Paul Titus said that he believes that the analogy of all convulsive seizures is well drawn. When studying antitryptic changes in blood in cases of eclampsia he found the changes increased rapidly up to a certain point when a convulsion followed at about the same time. Dr. Brenner of the West Penn Hospital made the same observation in epileptics. Dr. Titus has observed that patients suffering with toxemia of pregnancy have inordinate appetites. He believes that Dr. McMurray's treatment and dietary are excellent. Eclamptics do best under starvation, gastric lavage and colon irrigation, often repeated. In several cases when food was allowed too soon convulsions returned Frederick B. Utley, Reporter.

PITTSBURGH NEUROLOGICAL SOCIETY

Meeting of Dec. 15, 1917

Meeting of Dec. 15, 1917, President C. H. Henninger in the chair.

Dr. C. R. McKinniss presented two cases as follows:

Case 1.—H. H., born Feb. 1, 1889, single, teamster, had attended Pittsburgh public schools until 14 years of age and was in second reader. Used alcoholics for several years until about January, 1914, and had not indulged during that year. In 1913 he had an injury to back from fall and was in Presbyterian Hospital six weeks, but says he fully recovered. Family history: Father alcoholic to excess; one brother died of tuberculosis. On Nov. 20, 1914, patient had severe abdominal "pains and cramps," but worked November 21 and next day was taken to Allegheny General Hospital and later, November 24, operated on for appendicitis. He states he could not remember events after admission to Allegheny General Hospital until February, 1915 (over two months), and says, "It seemed like I went to sleep one night and woke up the next morning, though it had been two months. The nurse said I was noisy and had to be fed and was restrained in bed. I was paralyzed in legs and arms when I woke up and could not walk."

A report from Allegheny General Hospital states patient was admitted Nov. 22, 1914, had been having colicky pains and vomited anything he ate, was constipated for two days. Pains soon settled in right side in iliac region; temperature 100; pulse 80; blood count 10,400. Operation, November 24, showed a chronic appendicitis. A few days after operation patient began to complain of pain and weakness in arms and legs. Made so much noise in ward he had to be removed. Dr. George Wright made note of examination Dec. 22, 1914, as follows:

"Not satisfied with examination. Patient unreliable on answers. Extreme recent motor weakness in arms and legs; sensation to pain blunted; knee jerks diminished, almost absent; no Babinski; has false clonus on both sides. Possibilities are Landry's paralysis, myelitis or hysteria. December 25, had good clonus; no Babinski, knee jerks exaggerated. Dull sense of pain. Touch O. K. Diagnosis: Myelitis (?). December 29, patient complains of pains in knees. Knee jerks are much exaggerated; ankle clonus present; no Babinski; diminished pain sense all over body; touch sensation normal. Mental state of patient is fair; complains of all sorts of pains and aches; has been troublesome and at times delirious; very emotional since admission, at times almost maniacal. The variability of subjective and objective symptoms with absence of Babinski suggests functional trouble and I am inclined toward hysteria now. December 31, patient very much improved today in all muscular movements; grip of hands 50 per cent. better; he can now hold both legs up off bed for considerable period of time. Reflexes are active. Clonus, for a few minutes only on left, on right it is quite well sustained after several trials."

Patient was later seen by Dr. T. M. T. McKennan and a diagnosis of multiple neuritis was made. He left the Allegheny General Hospital in March, 1915, walked from there to Fourth Avenue station but "it took a long time."

Patient was admitted to Pittsburgh City Home and Hospital, April 3, 1915. He had had progressive loss of power in arms and legs since the operation (Nov. 24, 1914) and speech was less distinct. Pupils were miotic and stationary to light. Muscles of hand, forearm and arm atrophied; had "claw hand"; hand grasp much weakened; knee jerks and elbow reflexes much depressed. There was suggestion of clonus on right side. Babinski absent. Sense of touch was poor over legs for point and head of pin; pain sense dulled. Temperature was 98.6; pulse 76; respiration 18. Gait was loose and flail-like.

June 22, 1915. Staff note states: "Patient is much improved. Mind is clearer. He is alert and interested in surroundings; walks well and has lost the loose, flail-like action of arms and legs; has gained strength in arms, though there is still marked atrophy of extensor muscles of forearms, interossei, and of the thenar and hypothenar eminences of both hands. Knee jerks cannot be elicited; station good with eyes closed; no clonus or Babinski sign. There has been some wasting of the muscles of body generally but it is not marked, except in the groups mentioned. He can now dress and undress himself but does so with some difficulty. Says his arms and hands feel 'numb and no life in them' in mornings but after a time this disappears and patient says it was much worse during February and March."

Patient remained in the institution until March 20, 1916, when he was discharged. A diagnosis of peripheral neuritis was made and the results at time of discharge were noted as good. During the last few weeks of his stay in the institution he showed marked homosexual tendencies. Serological examination gave blood Wassermann negative; spinal fluid cell count 0; globulin positive; Wassermann negative.

Patient was again admitted April 19, 1916 (one month after discharge). During the interval he had been employed on a small chicken farm. A short time before admission he complained of abdominal pain and was taken to a general hospital (Washington, Pa.) and an operation performed for intestinal obstruction, under ether anesthesia.

Patient explained that the nurse started to give him a sponge bath and stopped before she had finished and he became cold. Everything turned black to him, could hear the nurses walking and talking but could not see them. Says it seemed like several people were holding him down and that he struggled to get away and believes now he was out of his head to act the way he did. He was restrained to bed and during the two weeks he was in the hospital he recalled people coming around him but felt like he was in a trance. He felt a dull steady pain in muscles of arms and legs and especially painful knees.

Our examination on admission showed that he frequently miscalled dull and sharp pains over arms and at times answers were delayed. Sensation over legs was good. He had marked bilateral wrist drop; no toe drop. Marked atrophy of muscles of hands, arm and deltoid; no atrophy of muscles of legs. His temperature was normal on admission but at times showed elevation up to 100. Constipation marked. Urine showed an occasional hyaline cast. Again he improved gradually, with marked improvement in use of hands and worked for several months as a night orderly.

He was discharged July 2, 1917, and called at the draft registration office concerning his draft number and claimed exemption on account of double wrist drop but they were not inclined to consider it; this of course was not an examination by a medical officer and is only mentioned to show the apparent improvement of the patient. He was again admitted July 5, 1917, as he was unable to secure employment and continued to help with the work about the hospital until Aug. 18, 1917, when he experienced severe pain in the left side of abdomen while lifting a patient into bed and had a blur before his eyes; the pain continued cramp-like in nature; he was constipated but did not vomit; pain was relieved by a snug abdominal binder. About three weeks later he became confused mentally, had severe vomiting, obstinate constipation and for several days and nights was quite noisy, screaming and shouting, hallucinated (saw black spiders on walls), and was restrained in bed for a time. He then cleared up mentally, but had numb tingling sensations in arms, shoulders and hands and had lost power in upper extremities; within three days this had progressed to almost complete paralysis of both arms. At the present time this has much improved.

In this patient we present a young man, aged 28 years, onset of condition three years ago with abdominal pain, surgical procedure and rapid development of paralysis apparently due to peripheral nerve involvement, followed by period of gradual improvement and then sudden rapid return of the primary condition, this being usually precipitated by attacks of abdominal pain and on two occasions surgical attempts at relief. There has also been pronounced psychic changes with suspicion and criticism of treatment received, sexual perversion, acute attacks of a maniacal nature and through it all a marked chain of hysteroid symptoms.

CASE 2.—A. F., aged 25 years, single, bartender, alcoholic to excess, denies any venereal infection, has had several operations on cervical glands for what seems to have been tuberculosis beginning at 7 years of age. At 10 years of age he had four weeks illness with sore throat, sweating and some heart involvement. During March, 1916, he was operated on for quinsy and had taken large quantities of beer and three to four whiskies daily but had been comparatively temperate from March to the time of his admission to the Pittsburgh City Home and Hospitals, June 15, 1916. Family history: Mother invalid from heart trouble.

Present illness began five weeks before admission, after he had worked hard on Saturday and Sunday as a bartender and was on his feet most of the time. He felt tired, legs feeling heavy when walking up stairs, and had no pain and no toe drop at that time. He retired after midnight and when he got out of bed at 3 p. m. he fell to his knees but finally dressed and walked five squares, taking half an hour to do so and says he had to "drag along." He could not work and walked back, taking one hour to travel the five squares and resting frequently on the way. He had no pain and says his feet just felt heavy. He went to bed and the following day tried to walk and fell to the ground and could not rise. He then had pain from the knees down and pain was severe for the next six days; he "yelled every time he was touched" and could not bear the weight of the bed clothing. The pain gradually subsided in the legs but the thighs became painful. He had had difficulty in voiding urine since the onset and at times incontinence and bowels were constipated. On admission here he had control of urine and bowel condition had improved.

On admission patient was examined in bed, was pleasant in manner and cooperated well. He said for the past three weeks he had had a feeling of electricity in his fingers and had difficulty in holding things in hands.

June 26, 1916. Staff note: Pupils, left, irregular in outline; right larger than left; both react to light very sluggishly, right slower than left. Tongue, tremulous, protrudes in midline. Upper extremities show fine tremor of fingers on extension and at rest; coordination good, sense of position good; biceps reaction is present; grip of hands equal but weak; no pains in arms and no pains on pressure along nerve trunk in arms; no wrist drop, no atrophy of muscles. Lower extremities show foot drop marked on both sides; feet and lower part of legs slightly swollen, cyanotic, glossy and painful to pressure on feet and legs; pain more marked in calf of legs, superficial layers of skin exfoliating; there is some atrophy of calf muscles; cannot lift right leg though there is some power in right quadriceps; can lift left foot six inches from floor and then it falls back flail-like; quadriceps action on left fairly good. Paresthesia of ankles and feet, frequently missing touch and pressure, sharp and dull, has improved since the examination on admission; deep pressure is distinguished best of all; sense of position is much impaired.

Serological study: Venereal infection denied; blood Wassermann 2 plus and spinal fluid (bloody) Wassermann 2 plus, globulin positive. Alcohol history: Bartender, beer and whisky to excess until latter part of March, 1916; only a few drinks since. General Health: Glandular tuberculosis since childhood and apex of one lung affected, recent tonsillitis and abscess. Mental: Alert and active, good insight and tone of feeling; memory and orientation normal. Urine showed few hyaline casts, pus cells and albumin. Diagnosis: Peripheral neuritis of lower extremities on a foundation of tuberculosis, syphilis and chronic alcoholism with recent acute tonsillitis and physical fatigue.

Treatment has been electricity, massage and antisyphilitic: neosalvarsan, 0.45 gm., given Aug. 20, 1916, and salvarsan, 0.6 gm., on each of following dates: Sept. 15 and 29, Oct. 6, 13 and 27, Nov. 10, 17 and 24, Dec. 22 and 29, 1916; April 20, May 25, June 10 and 17, 1917. Blood Wassermann was 2 plus on July 24, 4 plus on Aug. 19, 2 plus on Oct. 14, 2 plus on Dec. 9, 1916; 4 plus on Jan. 6, 2 plus on Feb. 10, 4 plus on May 5, negative on June 9 and 2 plus on June 16, 1917.

Examination Dec. 15, 1917: Pupils, equal, medium in size, regular in outline, reaction to light fairly prompt but of limited range, react good for accommodation. Tongue protrudes in midline and has fine tremor; there is also a tremor of facial muscles about lips. Upper extremities show tremor of fingers on extension, coordination and sense of position good, biceps reaction fair, grip fairly firm, no wrist drop, no atrophy, no pains. Lower extremities show foot drop corrected but still some weakness in dorsal flexion, color of skin normal, still some hair missing about ankles, atrophy still marked and comparison of calf measures today and on admission show the following changes: Right calf 28½ cm. today, on admission 31½ cm.; left calf 30 cm. today, on admission 33½ cm. Patient lifts feet readily from floor and moves them about with good coordination; sense of position good, with heel to toe and heel to knee test, also for location by pointing with eyes closed; location of point touched is prompt and exact; he has some difficulty in telling a dull point when testing with dull and sharp points. Knee jerks are abolished even when reinforced, Romberg sign marked and patient sways some even with eyes open but this has much improved and he has walked without a cane for the past few months. He wore bandages on ankles to help toe drop for a time and from December, 1916, until about May, 1917, and has gone about without any mechanical aid for nearly six months. Heart: Apex beat 8 cm. to left of midline, action good, aortic sound accentuated. Lungs: Breath sounds over right apex of a bronchial type but no râles heard even on forced inspiration; patient has gained in weight in past few months.

Dr. Diller, in discussing: Concerning the last case, I have always understood that toxic neuritis, such as alcoholic, etc., involved the arms as well as the legs. I would be very loath to accept it as a toxic case involving the legs alone. The fact that there seems to be some bladder weakness seems to make it some form of myelitis, with some associated neuritis. In the American Medical Association the subject has come up as to whether syphilis can produce peripheral neuritis. There used to be a feeling that syphilis is not a cause. Dr. Frye showed a case which makes it look as though it is a cause in some cases. But in the present case the course pursued in giving antisyphilitic treatment was justified.

The first case is a very difficult one and I would not know what to think of it. I might say that it might be amyotrophic lateral sclerosis with some involvement of the arms, with some involvement of bulbar control, but I hesitate to make a diagnosis.

I have at present two cases which I think worthy of reporting. One is a case of a woman of 35 years who has been pregnant four or five times and she has had one abortion which was natural and three which had been produced by physicians because of pernicious vomiting of pregnancy, and following the last abortion which occurred a couple of months ago she was very ill, became delirious and at the end of about a month became weak in the arms and legs; she was brought to St. Francis Hospital two or three weeks ago. The delirium is somewhat clearing up but the weakness in arms and legs which was rather moderate at first is increasing and characterized also by very marked tenderness, so that she is hardly able to move the arms or legs. She has some weakness of the facial muscles; her speech or articulation is weak; the muscles are weak though there does not appear to be any difficulty in swallowing. She has a little fever and a rapid pulse, and occasionally in the morning loses control of the bladder and bowels. The diagnosis in this case is toxic neuritis arising in the way that I have indicated, and there seems to be a minor degree of myelitis or some toxic influence on the cord and bulb, but the brunt of this falls mostly on the peripheral nerves. Dr. Henninger looked after the patient during my absence and may say something about her.

The other patient is a B. & O. railroad conductor, a man of good habits. As you know, B. & O. conductors are men who usually do not drink. This patient for three months past has been having periods of weakness in the arms and legs and about four to six weeks ago he squeezed 30 with the dynamometer. The tendon reflexes are reduced, but there is no tenderness nor objective loss of sensation. We looked for atrophy but could not find any. We put him in St. Francis Hospital on rest and hydrotherapy, with marked improvement. Today he squeezed 70 with the dynamometer. The case impresses me as one of toxic character which is in a way like Landry's paralysis, only it stopped short of the complete picture. It is in the same line as the case of Dr. McKinniss and I am interested in watching this man. There may be something more definite pathologically.

Dr. McKennan: This second case strikes me as having originated as a peripheral neuritis; the extension may have been neuronic into the cord, or at least involvement of other neurones in the cord itself. The pathology as far as my recollection is that it is not always confined to the periphery. There is an interesting question in regard to involvement of the bladder. The question is: Is it possible to have bladder involvement in peripheral neuritis? I think functionally, yes, just as we get involvement of the bladder without neuritis or any myelitis or any cord involvement at all, but in peripheral neuritis, it is not usual to have bladder involvement and it occurs only in the minority of cases. In some individuals from any little bodily disturbance there may be bladder involvement, so in a given case you may have loss of control of the bladder and it does not mean that there is any cord involvement, nor nerve involvement at all, but I believe that in peripheral neuritis there may be loss of bladder control.

This last man strikes me as a case where the peripheral nerves are permanently damaged. How can one say with the many causes which exist in this individual which one is operative. He potentially has a case of cerebrospinal syphilis in whom tabes dorsalis or paresis may occur. The report in regard to the Wassermann reaction and salvarsan injections is interesting because we have had a chance to observe it over a year's time. That is a question in itself which should not be opened up at this time.

The first case strikes me very odd; it is a lower arm type of disturbance. I do not know whether it is peripheral or in part of the cervical enlargement.

Dr. E. E. Mayer: It is very hard to say very much about the last case. I am a little at sea in considering the manifold etiology. If I had only to take the present examination I would say that it is a case of neuritis. The patient, however, presents a syphilitic etiology in addition to the alcoholic history and that, no doubt, is a great factor with him. Clinically his type answers to the neuritis group.

As to the first case there are so many things which Dr. McKinniss brought out in the history which to my mind makes a clear picture. My diagnosis would be cerebrospinal syphilis. In the first place the crises; second, attacks of clouded consciousness which Dr. McKinniss did not go into very fully, but which I imagine were the kind of attacks which accompany cerebrospinal syphilis; third, the picture presented here tonight is a syphilitic radiculitis. The patient presents involvement of the fifth, sixth and seventh cervical roots, its rapid onset and its rapid clearing up being typical. I do not see any neuritis at all. I also think that the preceding factors in his history clearly indicate that syphilis is the etiologic factor. While he shows today more than anything else a radiculitis of this part of his central nervous system, at other times he had evidence of syphilis of more extensive innervation. Dr. W. H. Mayer has a patient at the S. S. Hospital which is similar to this. Take the picture as you see it: it answers to the classical picture of radiculitis.

Dr. Wholey: There are a couple of points which occur to me with regard to the first case especially. Dr. McKinniss spoke of the injury two years previous to the first operation for appendicitis but no stress was laid on that. The patient states that he fell on his shoulder. I do not know the severity of the fall, but it is possible that he received quite a shock which we may term concussion, especially in the cervical cord where the symptoms have developed more prominently as the years have gone on. Of course we have the toxicity of alcohol to be taken with it. One must also remember in this case progressive muscular atrophy. The picture now in the hands, forearms, the claw hand with atrophy of the thenar and hypothenar eminences and the interossei; it is a picture of spinal progressive muscular atrophy. None of the causes which figured in its development is known definitely. How much the injury figured I do not know. It is common to have considerable shock and concussion to the spinal vessels and cord and apparently the patients get well, but some time later it is a point of least resistance, and some poison, like ether or alcohol, attacks the weaker point and brings about the evolution of disease like progressive spinal muscular atrophy. This patient evidently passed through a distinct dissociated state and there is no question of his having suffered a very distinct cleavage in his association. His usual tendency to slip into this condition with some of the symptoms which he had before is a common experience. It shows very well his dissociated mental condition. I think the cervical region of the cord is the principal thing involved, the motor horns of the cervical region with extension upward. If it were not for these facts one would have to think of the possibility of lues but these features seem to give a reasonable explanation.

In the second case, there are a number of factors involved. Probably the patient has had a peripheral neuritic trouble but one cannot get away from the fact that there is cord involvement due to syphilis. We know how manifold the symptoms are and the variety of conditions we can get in any part of the cord or the brain. In this particular patient the lower motor area of the cord is attacked to some extent and in the other case the cervical region but from an entirely different cause.

Dr. W. H. Mayer: The first case looks like another which we have had; it seems to conform to the radicular type. I believe the radiculitis extends down to the eighth cervical or the first dorsal roots and conforms to the Klumpke type. Of course the atrophy and the bulbar symptoms are in the same syndrome; the pupillary symptoms are also due to cord involvement. These are all present in a radicular syndrome. The atrophy is explained by involvement of the anterior roots which are close to the sensory ones in the cervical region. The clonus and the Babinski which were variable, coming and going while the patient was at the Allegheny General Hospital, further adds to the diagnosis of radiculitis being part of the clinical syndrome and there is of course a possibility of a syphilitic diagnosis especially of the radicular type. I cannot agree with the diagnosis of progressive muscular atrophy.

The second case is somewhat beyond me but conforms, I believe, anatomically to the toxic neuritis type.

Dr. Henninger: Just a general impression. It is a common thing to have the legs involved in alcoholic neuritis, and I do not say that it cannot be limited to the lower extremities. About this matter of a negative Wassermann I am a little skeptical; it does not always exclude syphilis. According to Dr. McKennan, where the physical findings are sufficient and positive a negative Wassermann has little value.

With regard to Dr. Diller's case, I have never seen one so toxic: a toxic delirium, peripheral neuritis with all the nerves practically involved. All the reflexes are gone except the spinal reflex on irritating the foot, but it may be all peripheral. As regards loss of control of the bladder and bowels, I do not think that this patient pays any attention to it; there is more or less amentia.

Dr. McKinniss: The second case can be analyzed better than the first. If you consider the patient with the two sets of symptoms it looks like a simple case. Here is a man who after many months has lost knee jerks, sluggish pupil on one side and the other stationary and a marked Romberg, a positive Wassermann reaction and has improved much under antisyphilitic treatment. If we stop right here we can agree on the diagnosis. But he has more than that. On the other side he has a typical case of acute peripheral neuritis with the glossy skin, with painful areas along the nerve trunks, toe drop after history of alcohol excesses and acute peritonsillar infection; and I think we can look on him as a clear case of peripheral neuritis. I feel that we had two conditions: beginning tabes or cerebrospinal syphilis and acute neuritis.

About the other case I am as much in the dark as before. He has had various diagnoses made, Landry's paralysis, myelitis, hysteria, radiculitis, peripheral neuritis, etc. I do not know what he is. To me it appears that there is certainly something more than a peripheral condition. The speech and the tongue appear to be a beginning involvement of the bulb. In the beginning it seemed like a clear case of neuritis and we thought that this individual might be particularly susceptible to ether because of the way that the attacks began, the first with an abdominal operation and ether anesthesia and the second attack after another abdominal operation. At first after the operation the patient suddenly developed loss of power in the upper extremity and the diagnosis was made with some indecision at that time. He had electrical treatment and hydrotherapy and improved up to a certain point. After that was able to do about two and one-half weeks' work, like painting, etc., which shows that he had fair muscular power. Then he had the abdominal pain and went to a general hospital and was operated on for intestinal obstruction. Within forty-eight hours he was noisy, troublesome and had to be restrained, and in this peculiar confused state he was brought back to us, but within a few days he was back to his previous condition. He had weakness, wasting and some tenderness along the nerve trunks. Then he improved until August and was working as an orderly. He took some veronal, about 10 grains, and felt dopy for a few days and then went to bed, became excited and found fault with everyone and everything, and gradually improved to what he is today. In each one of these maniacal outbreaks he knew of people around him but he said that he could not express himself. This is another point: he is hysteroid, all through the reaction there is hysteria. When he becomes disappointed he pouts, he feels offended, he attempts to elicit sympathy from the nurses and physicians. He tends to blame the physician; he says he did not have appendicitis. He says that at the Washington Hospital the nurse left him before she finished bathing him. For his last attack he puts the blame on being put in a bathtub and left there. But what he is I do not know.

Dr. Diller: I have been pretty shy of the Freudian theory but I have seen two cases which seem to support the Freudian theory. I was called to see a girl who was kept very strictly at home away from beaus, a very husky and bright girl. She has developed movements which are increasing and which are really the movements of fornication, to and fro movements of the pelvis and an up and down movement of the thigh. At first they seemed to resemble chorea but they are hysterical. We know that the normal, physiological, sexual appetite is suppressed in modest women. Then I saw another case of the same kind referred by J. I. Johnston. A queer coincidence to have two cases of the same kind.

Dr. McKennan: Why call that Freudian?

Dr. Diller: Because of the suggestion of the movements of fornication; there is a thought in the mind below the level of consciousness which brought it out.

Dr. Mayer: I am just reminded of an interesting case of a man who was working in one of the mills who suddenly felt faint, quit work and went home complaining of pain in the neck. A doctor was called the next day and found that he had a paralysis of the right arm. He was taken to the hospital where he remained two weeks. That was in September and October, if I remember correctly. I saw him about two weeks ago and he has a clear-cut picture of a radiculitis with involvement of the cervical roots, with the sudden onset of pain in the neck, and his Wassermann is positive.

Dr. McKennan: I would like to report a case of a man about 52 who went to a sanatorium with a good deal of constipation, some little digestive disturbances and nutrition not very good. He had some hemorrhoids which were operated on. I do not know what operation was done but he was allowed out of bed in about a week. Then it was found that he was unable to walk, he was incoordinate. A Wassermann was made of the blood which was negative and the spinal fluid also was negative. I saw him and there is no doubt that he has tabes dorsalis even though all the laboratory work is negative; he has all the typical signs. He has a history of lightening pains over a period of two years. He has something which I do not believe I have ever seen before in tabes. His pupils are fixed in complete mydriasis, and the optic nerve is normal. That struck me as unusual though I have seen cases a few times before which suddenly developed incoordination from a slight illness or operation. In this case the diagnosis was not made before the operation.

W. H. Mayer, Secretary.

PITTSBURGH OPHTHALMOLOGICAL SOCIETY

Meeting of January 7

Meeting of Jan. 7, 1918, President Edward B. Heckel presiding.

Dr. E. W. Willetts was present by invitation and demonstrated Dr. Meanor's case of melanotic sarcoma of the cornea. Male, farmer, aged 68, consulted Dr. Meanor for a growth on the left cornea. His friends had noticed a spot in the eye for a year and a half, but the patient said that a spot had been noticed on the eye ten years ago. The growth was dark red in color and extended over the cornea from the temporal limbus to the center. The anterior chamber could be seen under the growth and was normal in size. The iris and pupil were normal, although a pigmented spot could be seen on the upper part of the iris; this, however, did not look at all different from the spots frequently found on normal irides. When first seen by Dr. Meanor, the growth was entirely on the cornea but several weeks later a few melanotic spots appeared in the neighboring conjunctiva. A very small piece was removed from the cornea for examination. Dr. Willetts reported the growth a typical melanotic sarcoma.

Dr. Markel presented a case of complete aniridia. M. H., aged 15. When 5 years old, the parents took the child to an oculist, who told them that glasses would not help very much, but advised that a pair of lenses he prescribed be worn. These were worn until two years ago when an optician changed them, giving a pair of prisms each 5 degrees base in. She now has a marked convergent strabismus and seems to prefer to fix with the left eye. There is a fine, rapid, lateral nystagmus in both eyes, and complete absence of the irides. The ophthalmoscope shows irregular spoke and dot-like opacities (a lamellar cataract) in both eyes. No details of the fundus could be seen on account of the nystagmus and the lenticular opacities. She complains of photophobia to a very slight extent. Has been able to attend public school and advanced each year with her class with the exception of one year. She stopped last year in the sixth grade because of the vision becoming too poor. Lenses do not improve vision in either eye. The child was advised to continue her studies at the Institution for the Blind.

Dr. Heckel, in discussing, said he thought that, since the sight had been better in Dr. Markel's case, a needling of the cloudy lenses might be helpful. He asked if the nystagmus had always been present, as it might have been caused by the lenticular opacities.

Dr. Heckel reported a peculiar case treated by him recently. The patient was a miner, whose cornea had been so nearly penetrated by a small fragment of coal, in its entirety, that a part of the body projected into the anterior chamber while the superficial corneal layers had healed over the embedded portion; the lens was opaque. The opaque lens was removed, the coal fragment not being disturbed at that time but being later removed with iris forceps applied through a simple corneal incision.

Dr. Sturm presented the following case: Miss E. H., aged 26, stenographer. Family history was negative. She had had no sickness until the present trouble began two years ago. At that time she weighed 167 pounds, but gradually lost flesh until now her weight is 120. One month ago her vision became blurred and she could not see to read; this passed off in a day or two and her vision being again normal, she was able to do her work as before. Ten days ago, after she had had normal vision and had been able to work at the office, she attended the theater and, while watching the performance, her vision became blurred so that she could not see the performers distinctly. The next day she was unable to do her work as she could not accommodate for near. She consulted Dr. Sturm on the following day, on the advice of her physician, and he found the condition of her vision as follows: O. D. V. 20/50 and Jaeger No. 10 for near; O. S. V. 20/50 and Jaeger No. 10 for near. Mediae clear and fundi negative except that the edges of both disks were slightly blurred. The refraction under atropin was as follows: O. D. + 2.50S. + .50 ax. 90 — 20/20; O. S. + 2.50S. + .50 ax. 90 — 20/20. For the past two years the urine has contained large amounts of sugar and other symptoms of diabetes are present. Under restricted diet, the sugar has gradually diminished in quantity.

Dr. Heckel, in discussing, said he was of the opinion that the impairment of vision was due to temporary paralysis of accommodation, a condition that he has seen occur before in diabetes, the blurred distance vision being due to the uncorrected hyperopia.

Dr. Willetts stated that there was probably temporary loss of accommodation. He has seen this occur many times in neurotic patients and in those whose special centers were fagged from overwork. It might be due in this case to the generally impaired condition of the patient, secondary to diabetes, or due to exhausted centers and entirely independent of the existing diabetes. In either case he would not consider it pathologic.

Dr. Krebs stated that he had had two cases recently in which there had been blurred vision due to a rapid change in the error of refraction coincident with an increased amount of sugar in the urine.

WILLS HOSPITAL OPHTHALMIC SOCIETY

Meeting of January 7

Dr. William Campbell Posey presented a case of sarcoma of the orbit in a man 54 years of age, who had been struck on the head and eye some ten years previously by falling timber. The affected eye had been enucleated elsewhere some four years previously, perhaps for sarcoma of the choroid, though the cause of blindness in the organ and the reason for its removal were unobtainable. The recurrence of the growth in the orbit, if such was the sequence, presented an unusual form, the tumor appearing as a firm black rounded mass, which occupied the position of the eyeball and extended downward and forward, resembling in its position and form a microphthalmic eye with attached cyst below. The mass was removed in toto by Dr. J. Milton Griscom in the absence of Dr. Posey, and the contents of the orbit eviscerated. Copious hemorrhages attended the operation and recurred at each dressing. Two weeks after the operation, the orbit was subjected to a thorough electrical desiccation treatment by Dr. Clark, since which time the hemorrhages have ceased, and the orbit now shows signs of being filled in with newly formed tissue.

Dr. Posey presented a woman, aged 26, who had been married five years and had three children living and well, and had had no miscarriages. She had cerebral syphilis and marked papillitis in each eye. Vision was reduced in the right eye to 1/60 and in the left eye to 3/60. Fields of vision are concentrically contracted for form; colors not discernible. No symptoms present except intense headache and loss of vision, which had come on rapidly but with interruptions of spells of apparently normal sight. The tests were Wassermann +, von Pirquet negative. Rapid improvement followed a rigorous course of mercurial inunctions, so that in four weeks there was a marked reduction in the papillitis and vision equaled 5/9 in each eye.

Effect of Salvarsan in Causation of Optic Neuritis. Dr. Posey said that for a long time there was a general impression that salvarsan acted deleteriously on the tissues of the optic nerve, and especially in the presence of nonsyphilitic disease of the retina and optic nerve. Gibbard, however, who investigated this phase of the subject, observed but two cases of cerebral nerve disease in 1200 cases in which salvarsan was used and an increase of dosage caused a disappearance of the trouble. Elliott, moreover, found that cases presenting signs of optic neuritis of presumably syphilitic origin act excellently in response to the drug. Further search of the literature also indicates that there is no ground for the belief that salvarsan has a poisonous effect on any of the ocular tissues. Certainly all evidence is lacking that the drug causes atrophy of the optic nerve through direct toxic effect. Dr. Posey said that from his own limited experience, it would appear that the toxic effects wrongly attributed to salvarsan may be avoided by trusting the administration of the drug only to those who are properly trained, and that the combination of salvarsan with mercury and potassium iodid greatly augments the spirocheticidal properties of each of these specifics. In order to be efficient, salvarsan should be administered early, before the spirochetes reach the vascular tissues and before they have time to damage the delicate tissues of the eye. Later results are certainly less favorable, though we have all seen gummata (?) of various parts of the eye disappear under its use. Indeed cases have been reported where Argyle-Robertson pupils have reacted again to light following intravenous injections of the drug.

Dr. Posey referred to Knapp's paper read before the American Ophthalmological Society in 1916, in which the author lauded the employment of salvarsan in eye syphilis. The author gives his patients mercury by inunctions once or twice daily, small doses of potassium iodid, and neosalvarsan in five one-half doses at three-day intervals; then after two weeks, salvarsan is given in one-half doses every three days for five times. The mercury and potassium iodid are then continued. Knapp states that the Wassermann test did not help him in determining the effect of the treatment, as in all of these cases it remained strongly positive, as has been the experience of all laboratories. He employed intraspinous treatment with salvarsanized serum in order to bring the agent into close contact with the diseased tissues in five cases of optic atrophy, but in one only was there any improvement.

A paper by Fordyce of New York, read in Philadelphia last year, was commented on by Dr. Posey and his conclusions quoted as follows: "Optic atrophy with a high cell count, positive Wassermann and a luetic curve, offers favorable conditions for treatment, as is evidenced by the fact that cases have been stationary for two years with negative findings after treatment and with visual fields enlarged or stationary." On the other hand, he believes that optic atrophy with negative fluid findings offers no indications for intraspinal treatment. Fordyce insists that every case of secondary syphilis as a matter of routine should have an ophthalmoscopic examination from time to time. Marked evidence of pathologic changes may be present with slight subjective symptoms or impairment of vision, and the condition may be completely overlooked unless one is on the alert for the possibilities in these cases.

Dr. Frank C. Parker presented an interesting case of magnet extraction in a man about 25 years of age. The patient presented himself in Dr. Posey's clinic, with a history of having been struck in the right eye by a foreign body while using a hammer, twenty-four hours before admission. External examination showed only a small elevation of the limbal tissues up and in, resembling a very small pinguecula. A faint pink flush over this spot was the only visible discoloration. The iris was drawn slightly toward the seat of injury. Tension normal. No pain. Vision but slightly impaired. Ophthalmoscopic examination disclosed a glistening black foreign body, up and in, and posterior to the lens margin. It floated freely in the anterior vitreous.

It was decided to apply a magnet at once, the blunt tip of the Parker magnet being held directly over the projection at the limbus. On turning on the current a small foreign body immediately dislodged itself from the limbal thickening and attached itself to the magnet. The ease with which the foreign body had been removed led to the suspicion that possibly all was not well. A second examination with the ophthalmoscope showed the original foreign body occupying its former position. While viewing the foreign body the magnet was turned on and off several times. Each time the current was turned on, the particle could be seen to jump toward the magnet and then fall back to its original position. It appeared to slide back and forth in a minute canal in the vitreous, produced at the time of the injury. At no time did the body appear to change its position save when the current was turned on. Had the vitreous been fluid conditions would probably have been different.

Attempts were made to draw the fragment through the pectinate ligament, behind the iris and through the pupil, but the bulk was too small to offer sufficient attraction to overcome the resistance of a healthy ligament. Therefore a posterior sclerotomy was done and the fragment extracted with ease. Two weeks later vision equaled 6/9.

Dr. William Zentmayer presented a case of glaucoma treated by the trephining operation. The patient, a laboring man 47 years of age, discovered in January, 1915, that on closing the left eye he could not read. He recalled that during the previous summer there was a blurring of the right eye and that it was somewhat congested, but not painful. The right eye was operated on by Dr. Hardy of St. Louis, in April, 1915, who did a trephine operation. The patient thinks that vision was not improved thereby. For two years past he has seen halos with the left eye. He was first seen by me in March, 1916. At that time the vision in the right eye was 20/40, and in the left eye 20/20. Fields: Right eye, a triangular sector, apex at fixation and 60 degrees wide at its temporal base; left eye, almost a nasal hemianopsia with fixation preserved. The right eye showed a filtration area including the whole conjunctival flap, over which the conjunctiva seemed thin. T = 39 mm. There was a small basal iridectomy. Papilla partly atrophic with a very deep pathologic cup. Left eye T = 39 mm., papilla gray, deep pathologic cup.

He was given pilocarpin and was not seen again for one year, when vision and fields were about the same. He was again seen in December, 1917, when he stated that, for the past three months, there had been a fog before the left eye which by noon each day became so dense that he had to depend on his right eye. On examination the left eye showed a hazy cornea, pupil partly dilated, and a tension of 53 mm. Right eye, tension 12 mm. The field of left eye was contracted to a narrow trowel-shaped area extending from 5 degrees on nasal side to 60 degrees on temporal side and widest dimension of 25 degrees near fixation point. On Dec. 15, 1917, the left eye was trephined and a basal iridectomy secured. There was considerable reaction. At the end of the second week vision equaled 15/20, and the field had increased about 10 degrees.

The case was exhibited particularly to illustrate the course of a case in which a classical operation and operative result had been obtained almost two years before. The central vision has held up well but the field is gradually contracting. Tension is normal and there is a large filtration bleb.

Harold W. How, Secretary.

COUNTY SOCIETY REPORTS

ALLEGHENY—JANUARY

At the annual meeting of the Allegheny County Society the following report was submitted by the Committee on Public Policy and Legislation:

During the year of 1917 the members of the Committee on Public Policy and Legislation of your society have responded to many calls for advice and have assumed the responsibility for several prosecutions as well as giving moral support to many others. We have appeared in various city and county and state courts and have succeeded in squelching some ignorant and some arrant quacks.

We acknowledge our gratitude to the officers of these various agencies of the law for courteous and effective cooperation, and take extreme pleasure in specifying Assistant District Attorney Homer N. Young for his untiring and successful prosecution of Allegheny County's leading quack. We bespeak from you for our successors the elimination of all trivial personalities in the bringing of charges against alleged offenders.

Our experience with the legislation of this commonwealth was not so pleasant nor profitable, and after personal experience before representative committees of the House, we unhesitatingly, place ourselves on record with Dr. J. B. McAlister of the Committee on Public Policy and Legislation of the Medical Society of the State of Pennsylvania. Our combined state-wide efforts on behalf of amendments to the Workmen's Compensation Law were a complete failure.

All parties agree that an organized and united medical profession could be a most powerful moral and practical influence in enforcing the passage of just legislation. We are now fairly well organized and have been well represented by our officers, but the rank and file of the society have by their indifference to repeated appeals apparently given the lie to their chosen committeemen before our legislative body.

It is apparent therefore that the old system, namely, the sporadic appearance of representative delegations before the legislature, is a failure. Let us then give a fair trial to the plan of Dr. McAlister and learn by experience what results may be attained by the "employment of a full-time, amply paid, high-type medical man to organize the profession and represent us before the legislature. Every doctor in the state could well afford $1 or $2 annually for such a man. . . . A man to put inspiring editorials into our medical journals, and to present the highest ideals of the medical profession before lay bodies on all occasions; the type of man to mingle among our legislators during legislative sessions and overcome the many unfair and unjust prejudices against our profession, prejudices fostered by those interests seeking an easy way to get into the profession; a man who can keep the profession in line, so that any individual or small group of individuals who have their own views on various matters pertaining to the profession will not independently have introduced into the legislature bills to the confusion and detriment of more important medical bills and then, a man who, when he talks, the politicians know has the solid support of the twelve thousand physicians in the state and all the influence each one of them can exert. Such a man may be hard to find, but it is only the question of each one of us being willing to contribute our mite and our problems will be easy."

We may then be spared the soul-searing spectacle of a biannual fight against anti-vaccinationists, antivivisectionists, etc., ad nauseam.

Signed Walter F. Donaldson, Chairman,
Dr. T. G. Greig,
Dr. H. Turner,
Dr. M. E. Stover,
Dr. C. L. Palmer.

BERKS—JANUARY

The Berks County Medical Society, at its meeting January 8, enjoyed the reading of an address delivered by Dr. Isaac Heister nearly one hundred years ago, when he was elected president of the society.

Dr. Ira Shoemaker reported the following case: H. M., aged 57, conductor on trolley, called at my office, Oct. 9, 1916, with an eruption on his body which had been present for several days. On inspection the eruption was seen to be of a hemorrhagic type, from a very small spot to about ¼ inch in diameter, on all parts of the body. There were one half dozen or more ecchymoses of various sizes on the arms and legs. The man was apparently healthy without any complaint whatever excepting, as he called it, a slight rheumatic pain in his left shoulder and arm. His appetite was good, bowels regular, kidneys active. He was ordered to go home and remain in the house and keep quiet. In about three days he began to bleed at the gums quite freely, and several large hemorrhagic spots appeared on the tongue. A few days later blood was discovered in the urine and also in the stools. The nose finally began to bleed but was easily controlled.

The hemorrhagic condition was gradually brought under control and his condition improved to such a degree that he was allowed to get out of bed about November 10 and about the 25th was permitted to go down stairs. On December 1 he was seized with a chill more or less pronounced, and I was sent for. On examination a small well-defined consolidation was found on the right lung posteriorly. The patient passed through the acute stage of the pneumonia uneventfully, but resolution did not fully take place. Dulness persisted and the tendency seemed to be toward a downward course and he gradually failed.

The hemorrhagic tendency did not return to any great degree but the gums persisted in bleeding and could not be wholly controlled. A trained nurse was put on the case on January 10, and every effort was made to bring about an improvement. On the night of January 22 or 23 there appeared a swelling of the right parotid gland as large as a hen's egg. The peculiarity of the case was that in the evening the neck was normal and in the morning the swelling was present.

At different times during the last few weeks of the disease the stools were tarry, showing the presence of hemorrhage in the intestinal tract. For about two weeks before death his mind was wandering and he was delirious. Death occurred on January 28, about sixteen weeks after commencement of the disease. The diagnosis was purpura hemorrhagica, complicated by pneumonia and acute inflammation of the parotid gland. Etiology: A toxemia due to some autointoxication from an unknown cause or possibly acute febrile condition and depressing disease.

Dr. Robert M. Alexander read a paper on "Cerebrospinal Syphilis." The subject was divided into syphilis of the brain and syphilis of the cord. Basilar syphilitic meningitis was divided into a nerve type and vascular type. Diagnosis, history, the peculiar irregularity of the symptoms and serodiagnosis were discussed in detail. Speaking of serodiagnosis, it was stated that only a positive Wassermann reaction was of value in diagnosis. Cell count, the globulin test, Noguchi's butyric acid test, etc., were discussed. The more important and usual symptoms of spinal syphilis are Argyll-Robertson pupil, pain, bladder disturbances, and sexual impotence. It was shown that syphilis may invade any part of the spinal cord, and the various symptoms produced were discussed. Speaking of the therapeutic test it was stated that when a lesion suspected of being of syphilitic origin heals rapidly under antispecific medication, the presumption was that it was syphilitic. Some forms of brain tumor, notably glioma, improve under the same kind of medication but the improvement is neither so thorough nor so lasting.

From the standpoint of treatment the literature on the subject for the last year and a half was reviewed briefly, the various later methods being discussed: Swift-Ellis method and the Ogilvie modification of the same. The intracranial route, mercurialized serum, and lumbar puncture were mentioned as being the more important methods. Salvarsan was held to be superior to neosalvarsan, and mixed treatment, salvarsan and mercury, to all other methods. Mercury is best introduced by inunction, as the lymphatics are more readily reached in this manner.

At the close of the meeting the members adjourned to the Berkshire where dinner was served.

Clara Shetter Keiser, Reporter.

BLAIR—JANUARY

The Blair County Society met January 22, in the Lincoln Room of Caum's Cafe, President Bliss presiding. Officers were elected for the ensuing year.

Following the election Dr. Pramanthanath Saha, assistant to Dr. Sommer at the hospital, read a paper and gave a demonstration in the application of the new wax-impregnated bandages as a substitute for paraffin in the treatment of burns and other wounds.

Dr. J. D. Findley read an interesting letter received from Dr. J. H. Galbraith, formerly of this city, now of Liverpool, England, in which he gives some reflections of a clinic conducted by Sir Roscoe Jones, an expert in orthopedic work in London. Following the business session a luncheon was served and a social hour followed.

Blair County feels proud of its growing honor roll, twenty physicians having responded to the country's call.

C. W. Burket, Reporter.

BUCKS—FEBRUARY

The Bucks County Society met at Newtown, February 13, President Fleckenstine in the chair.

Dr. George N. J. Sommers, surgeon to St. Francis Hospital, Trenton, N. J., delivered a very practical lecture on "Pain in the Right Iliac Fossa." He described the significance of pain as a symptom; the several types or characters of pain and compared them with other pains in the abdomen; he described the character of pain in the right fossa with various abdominal pain that might mislead and, lastly, he associated the structural function of the several organs and differentiated their distinctive symptoms along certain abnormal conditions occasionally found. He also described how the diagnostician is sometimes misled by dissociated and reflex pains and the possible transposition of organs.

Lieut. Russell Richardson, M. R. C., connected with Camp Funston, Kansas, described the manner of the investigations made with special reference to meningitis and the various means used to discover new cases. He related how prophylaxis was carried out in camp in order to detect any contagion and how the new recruits were isolated, examined and tested in order to prevent importing contagious diseases from their homes. The subject of serum therapy was well presented as practiced in the army service in meningitis and pneumonia.

Anthony F. Myers, Reporter.

CLARION—JANUARY

The Clarion County Society met in Clarion, January 29, and owing to the very cold weather and the drifted roads the attendance was small, only five members being present. Officers were elected for 1918. The annual banquet was dispensed with and it was voted that $50 be donated to the Clarion Chapter of the American Red Cross. Dr. F. P. Phillips of Clarion, our former secretary, has entered the service and in the near future we expect several more to be called. The society will keep all members who are in the service of their country in good standing while they are in the service.

The society adjourned to meet again at a time and place to be appointed by the program committee.

S. J. Lackey, Reporter.

LEBANON—FEBRUARY

The Lebanon County Society met February 12 in Hotel Walton, Dr. F. B. Marshall presiding. Dr. F. Allen Rutherford recited the history of a recent patient, giving in great detail the family and past histories, symptoms, results of physical examination, laboratory findings, etc., and then asked the doctors present to give their diagnoses. It became quite interesting. Dr. Rutherford then gave his diagnosis, luetic carditis, and outlined the treatment of the outstanding symptoms. He believes that rheumatism is the forerunner of many cases of carditis and, in every case, the closest watch must be given to the circulatory system. Absolute rest in bed, until one is positively certain that there is complete compensation, is the first big factor. Morphin in ¼ grain doses is safe and may be augmented by hypnotic doses of sulphonal, trional, veronal, or chloretone. Promiscuous use of digitalis is dangerous and is to be used only in selected cases. The bowels must be kept free, using calomel and the salts. Venesection has a distinct place in cardiac therapeutics when the right heart is dilated and throbbing against peripheral pressure and cyanosis and dyspnea are apparent. One may take from 10 to 12 ounces of blood. In dropsical cases the infusion of digitalis is indicated. The diet is bland, consisting of milk, cereals, toast, green vegetables, eggs and small quantities of meat. The use of antisyphilitic measures is of questionable safety as long as the compensation has not first been secured.

George R. Pretz, Reporter.

PHILADELPHIA—JANUARY

The Philadelphia County Society met January 9, at 8:30 p. m., Dr. Moses Behrend in the chair.

Dr. Alfred Gordon read a paper on "The Problem of Neurotics in Military Service." Special attention was called to a class of men, very little understood, whose manifestations are being regarded as spurious, imaginary and consequently of too little importance to be considered. The general term "neurotic" covers the vast field of individuals whose mental makeup is such that at any time during life under the influence of the least emotion they are apt to develop mental and physical disabilities rendering them useless in the community. Recognition of the psychic mechanism of such individuals is at the present time of paramount importance. Special attention is called to the "state of anxiety" so commonly found in neurotics. Those who show psychopathic tendencies and ill-adaptation in civil life are poor risks for military work. By admission to the firing line of mentally unstable persons France and England were confronted with great difficulties. This should serve as a caution to us. Instead of enlisting every applicant there should be established local neuropsychiatric centers for the examination of the men. This work could be done to better advantage before the men are sent to camps because of the nearness of relatives and friends who could give information concerning the anamnesis of the men. Moreover, local hospitals would place at the disposal of such men beds for more prolonged observation. By such a method the government would be saved the expense of feeding, clothing and training unfit men.

Lieut. Rae S. Dorsett read a paper on "Summary of the Report of the Tuberculosis Examining Board of Work Done at the Allentown Camp." Examinations for tuberculosis at the Allentown Camp were conducted by a board consisting of Drs. John J. Robrecht, William S. Wray, Robert G. Torry, Louis Jurist, Albert E. Blackburn and Rae S. Dorsett. We began our work on July 25, 1917, and completed it in the first week of September. Two hundred and twenty officers were examined, of whom five were found to have active tuberculosis. Of the 5,293 men examined eighteen had tuberculosis. At the time of the examinations the board could only recommend to the Disability Board at the camp and the Disability Board saw fit to keep some of these men in service hoping to improve their condition. Further treatment in four instances proved to be unavailing and the men were subsequently discharged. We cannot but feel that had the Disability Board acted promptly on the suggestions of the Tuberculosis Board the government would have been saved a measure of expense.

Lieut. A. A. Eshner, member of the Tuberculosis and Cardiovascular Board, read a paper on "Examination of Men at Fort Niagara and Gettysburg." In the First Reserve Officers' Training Camp at Fort Niagara 2,000 men were examined and at Gettysburg approximately 2,200, including, in addition to candidates, a certain number of National Guardsmen, artillerymen, quartermasters' men, men on detached service and others. Only a few cases of active tuberculosis were found, and but a small number of cases of disqualifying cardiovascular disease. At Gettysburg more than 10,000 enlisted men were examined, including twenty-nine cases of active tuberculosis and sixty-two cases of disqualifying cardiovascular disease. I would call especial attention to the large number of cases in which a murmur was audible in the third left intercostal space near the sternum, often transmitted obliquely upward to the left. This I was disposed to attribute to physical changes of an undetermined character induced in structures at the base of the heart in consequence of the great physical activity to which the men were subjected in the course of their training. I believe also that a third sound or even a well developed presystolic murmur could be generated as a result of temporary or permanent derangement in the relations between the left auricle and ventricle and the mitral orifice, whether in consequence of actual antecedent disease or from abnormal functional demands.

Dr. Herman B. Allyn read a paper on "Report of the Examination of the Sixth Infantry, N. G. P., in Philadelphia in August, 1917." The examination was part of a general examination of all the National Guard stationed in Philadelphia. It was in charge of a Tuberculosis Board of which Captain, now Major, Siner was president. The writer and Dr. John A. O'Connell were assigned to the examination of that portion of the Sixth Infantry stationed in Philadelphia. We were received most cordially by Major Nichols and Captain Arnold, the senior medical officers of the regiment, also by Col. Thomas Biddle Ellis and the captains of the several companies under him. Our instructions were explicit. We were to recommend the rejection of cases of active tuberculosis, as determined by the presence of râles, but were to retain in the service those having old or quiescent lesions. Perhaps some of us felt that a wider latitude allowed the examiner would have resulted in weeding out some who were not likely to render good service in the Army. Osler's experience with the British Army has been that those with long narrow chests, the mouth breathers, and the neurasthenics fill the hospitals. Fortunately we had our own Disability Board, so that those who were recommended for discharge by the board were, so far as we knew, all dismissed from the service. Dr. O'Connell and I examined 766 men, among whom we found eleven cases of tuberculosis and twenty-five cases of heart disease. Some of these were recommended for discharge and others were referred to the regimental surgeon. I believe it would be better in any subsequent examination, to keep a record in duplicate on filing cards of every man in whom anything abnormal was found.

Capt. A. C. Morgan gave a "Report of Examinations Made in Camps and Armories in Philadelphia, Gettysburg, Washington and Texas." Our Board of Examiners for Tuberculosis and Cardiovascular Disease examined 6,308 men in Philadelphia and vicinity during August and September, 1917. There were found in this number thirty-two cases of tuberculosis, only nine of which were discharged from the army. The remainder showing small arrested lesions, and with otherwise good physical condition, were recommended for retention in the service. There were discharged from the service fourteen cases of valvular heart disease, two cases of adherent pericardium, one case of chronic nephritis with marked arterial hypertension. A statistical report of other conditions found by the writer in association with Dr. T. Mellor Tyson in further study of the First Pennsylvania Regiment Infantry is embodied in the paper. Our work at Gettysburg was in the nature of a study of recalled cases and review of recruits sent down from Harrisburg and other recruiting stations. On one occasion over 50 per cent. of the recruits were rejected. Herein, I believe, lies a great weakness of the army. Were highly trained medical men to pass on applicants at recruiting stations the need for specialists in the army would be very greatly decreased. In the technic insisted on by Col. G. E. Bushnell when persistent moist râles are present, negative sputum and roentgen-ray findings are not to be given preference, this sign being deemed of sufficient importance to establish diagnosis of active pulmonary tuberculosis and to justify dismissal from service. At Waco nearly 12,000 men from Wisconsin and Michigan were examined. A remarkable finding was that of a very great number of cases of hyperthyroidism, many of large size. Many showed cardiac murmurs. A few had tremors and tachycardia, while but a very small number presented scars from operative treatment. Five hundred and ninety cases were referred to the cardiovascular board. While no classified table was made there were apparently an unusually large proportion of cases of aortic regurgitation. The majority of the cases presented history of acute articular rheumatism; twenty-seven cases were referred to the psychopathic department; twenty-five to the orthopedic, and forty-five to the nose and throat department. Five cases of asthma were discovered. Asthma should undoubtedly exclude the subject from service. In relation to administrative problems, let me say that in army circles when one is expecting orders or information he should be content with the apparent slowness of various procedures and, to use the army phrase, "sit tight" until orders come through.

NECROLOGY

In Memoriam—Francis Guerney Bennett, M.D.

We record with feeling of deep regret the passing into the Great Beyond of Francis Guerney Bennett, B.S., M.D., at the age of 50 years. Dr. Bennett was the son of Dr. Ash D. Bennett, a well-known practitioner of Mahaffey. He was educated in the public schools and at Lebanon College, Ohio, and then pursued the study of medicine at Jefferson Medical College, where he was graduated in 1889. He assisted Dr. Rice of Hastings for a couple of years, and then entered into the practice of medicine with his father in Mahaffey, where he practiced until 1901. He then came to Clearfield as partner of Dr. S. C. Stewart, but afterward established an office for himself and remained until about four years ago, when he removed to St. Mary's.

I knew Dr. Bennett very well and was associated with him almost every day at the hospital or meeting him in practice. Two or three nights a week for three or four years we met at one or the other's office to study together, especially laboratory work. Dr. Bennett was among the very first in this community fully to appreciate the value of chemical laboratory work. He was the best microscopist in the county in his day, and was deeply interested in the scientific side of medicine. We operated on dogs together and dissected several cadavers obtained from the state anatomic board. If he had but $100 and the choice of spending it was between a new buggy or a microscope, he would buy the microscope and make his visits on foot for lack of a buggy. From my association with him I learned many valuable facts and, and not the least pleasant of my memories of him are the recollections of his dry humor and a vein of sarcasm which was never of an offensive type, but full of wit and tonic in effect.

Dr. Bennett had that type of mind that, if he had been so placed that he could have followed his bent, would have made him distinguished as a pathologist. In his relations with his patients he was always found considerate and self-sacrificing. His ideals were of the highest and he was altruistic and never selfish. The world is better for his having been born.

S. J. Waterworth.

In Memoriam—Elmer S. Hull, M.D.

The following was adopted at the meeting of the Lycoming County Medical Society, February 8:

The Lycoming County Medical Society has learned, with deep regret, of the death of one of its members, Dr. Elmer S. Hull of Montgomery. Dr. Hull was graduated from the Jefferson Medical College. He intended to practice a specialty in a large city but, his health being rather delicate, he was advised to choose the outdoor life of the country practitioner and he became associated with his brother, Dr. A. P. Hull, in the practice of medicine at Montgomery.

By his medical ability, diligence and devotion to duty, Dr. Hull acquired a very large practice. His patients, to whom he had endeared himself by his many deeds, mourn his death as a great loss. But in his home his loss will be the greatest. Many men present a fine exterior to the world while their domestic attributes are anything but pleasant. Not so with our late friend, for it was in his own home that he appeared at his best. He was a delightful host and would share his last with a friend.

The Lycoming County Medical Society feels that in the death of Dr. Hull it has lost a good member; his patients, a splendid physician; the community in which he lived, a patriotic citizen; and his family, a wonderful husband and father. The society wishes to extend the most sincere sympathy to Dr. Hull's family in their time of sorrow.

Robert K. Rewalt,
G. Franklin Bell,
Charles W. Youngman,
Committee.

In Memoriam—Mrs. Lyla Houk Dull

The following action was taken by the Somerset County Medical Society at its January, 1918, meeting:

Whereas, It is written that "it is appointed unto all once to die," and

Whereas, Mrs. Lyla Houk Dull, wife of our fellow member, Dr. J. Earl Dull, has answered that Divine Decree, we, the members of the Somerset County Medical Society, adopt the following:

Mrs. Dull was a graduate nurse, and on Dec. 14, 1917, was in the performance of her duty in the Medico-Chirurgical Hospital in Philadelphia, giving relief to suffering humanity, when an accident occurred that resulted in her death the following day; she died in the service of country and humanity.

Hers was a sad and tragic death, made all the sadder from the fact that her husband, Dr. Dull, is "Somewhere in France" in the service of his country, our country, rendering aid to the sick, the wounded and the dying, and could not be with his beloved wife during the tragic ending of her life.

The Somerset County Medical Society desires to express the heartfelt sympathy of every member to Dr. J. Earl Dull and to the bereaved friends of the deceased, in this sore bereavement, realizing at the same time how futile words are to assuage the grief or lighten the burden; we commend them to Him who issued the "Divine Decree" for consolation and comfort, feeling that "earth has no sorrows that Heaven cannot heal."

W. T. McMillan, M.D.,
H. C. McKinley, M.D.,
Committee.

THE TRUTH ABOUT MEDICINES

NEW AND NONOFFICIAL REMEDIES

Since publication of New and Nonofficial Remedies, 1917, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Barbital.—Diethyl-Barbituric Acid, first introduced under the name veronal. In small doses barbital is a relatively safe hypnotic, but fatalities have followed its indiscriminate use. It is claimed to be useful in simple insomnia, as well as in that accompanying hysteria, neurasthenia and mental disturbances. From 0.3 to 1 gm. (5 to 15 grains) in hot water, tea or milk, or, if in wafers or capsules, followed by a cupful of some warm liquid.

Barbital-Abbott.—A brand of barbital complying with the New and Nonofficial Remedies standards. The Abbott Laboratories, Chicago.

Mercury Benzoate-Merck.—A brand of mercuric benzoate complying with the New and Nonofficial Remedies standards. Mercuric benzoate has the properties of mercuric chloride. It has been said to be useful for hypodermic use and in gonorrhea. Merck and Company, New York.

Chlorcosane.—A liquid obtained by chlorinating solid paraffin. It contains about 50 per cent. of chlorin in stable combination. Chlorcosane is used as a solvent for dichloramine-T; with it solutions containing as much as 8 per cent. may be prepared. When used in a hand atomizer, chlorcosane solutions of dichloramine-T may be made less viscous by the addition of 10 per cent. of carbon tetrachloride. The Abbott Laboratories, Chicago.

Betanaphthyl Salicylate-Calco.—A brand of betanaphthyl salicylate complying with the New and Nonofficial Remedies standards. Betanaphthyl salicylate is believed to act as an intestinal antiseptic and, being excreted in the urine, to act in a similar way in the bladder. It is said to be useful in intestinal fermentations, catarrh of the bladder, particularly gonorrheal cystitis, rheumatism, etc. The Calco Chemical Co., Bound Brook, N. J.

Acetylsalicylic Acid-Merck.—A brand of acetylsalicylic acid complying with the New and Nonofficial Remedies standards. Acetylsalicylic acid is employed in rheumatic conditions, and especially as an analgesic and antipyretic in colds, neuralgias, etc.

Chlorazene Surgical Powder.—An impalpable powder composed of chlorazene, 1 per cent.; zinc stearate, 10 per cent., and sodium stearate, 89 per cent. Chlorazene surgical powder is absorbent, slightly astringent, and forms a closely adherent film when applied to the skin. It may be dusted freely over denuded or abraded areas, cuts, wounds, and skin eruptions. The Abbott Laboratories, Chicago (*Jour. A. M. A.*, Feb. 16, 1918, p. 459).

PROPAGANDA FOR REFORM

Phenalgin and Ammonol.—At the time that synthetic chemical drugs were coming into fame and when every manufacturer who launched a new headache mixture claimed to have achieved another triumph in synthetic chemistry, Ammonol and Phenalgin were born and duly christened with chemical formulas. However, one of the first reports of the Council on Pharmacy and Chemistry showed them to be mixtures composed of acetanilid, sodium bicarbonate and ammonium carbonate. Since then the unwarranted claims made for these preparations have been exposed repeatedly, and the danger of the indiscriminate use of headache mixtures pointed out. Despite the exposure of the methods used in exploiting Ammonol and Phenalgin, one finds just as glaringly false statements made in the advertisements of Phenalgin today as were made in its unsavory past. This would seem to indicate either that physicians have short memories or that they are strangely indifferent to the welfare of their patients, to their own reputation, and to the good name of medicine (*Jour. A. M. A.*, Feb. 2, 1918, p. 337).

Absorption and Excretion of Mercury.—It may be regarded as clearly established that, in addition to the kidneys, the stomach may participate in this eliminatory function quite as well as the other portions of the alimentary tract. The occurrence of severe intoxications from the use of mercuric chloride in vaginal douches is likewise recognized. The absorption of mercury through the sound skin has been in dispute. To account for the efficacy of mercurial inunction, the contention has been made that the mercury thus applied is volatilized and absorbed through the lungs in greater part if not entirely. Experiments in the dermatologic laboratories of the Philadelphia Polyclinic leaves little doubt that the skin is an important, perhaps the most important, path of absorption of mercury applied by inunction (*Jour. A. M. A.*, Feb. 9, 1918, p. 392).

Basy Bread.—This is an asserted obesity cure put out by the Doctors' Essential Food Company, Orange, N. J. The advertising claims are extravagant and typical of other obesity treatment literature. Analyses indicated that in composition Basy Bread was similar to graham bread. Basy Bread sells for $1 a loaf. Dr. Wiley well sums up the case thus: "There is one way in which Basy Bread will reduce; that is, don't eat any of it nor much of it nor much of any other kind" (*Jour. A. M. A.*, Feb. 9, 1918, p. 407).

Campho-Phenique.—The Secretary of the Harvard University Medical School received, from the Campho-Phenique Company of St. Louis, a letter stating that the concern wishes to supply the senior students of all medical colleges with samples of Campho-Phenique and Campho-Phenique powder, and ointment, and asking the number of students and the name of every student in the graduating class. The Campho-Phenique concern believes in following the old advice, "Catching them young." In 1907, the Council on Pharmacy and Chemistry reported that Campho-Phenique (liquid) was exploited under a false "formula," that it was a solution of camphor and phenol in liquid petrolatum, and that for all practical purposes Campho-Phenique Powder was essentially a camphorated talcum powder containing apparently sufficient phenol and camphor to give the powder an odor. The report of the Council further brought out that the Campho-Phenique Company was in effect one of the numerous trade names adopted by one James F. Ballard. Mr. Ballard seems to market a number of "patient medicines," for some of which Dr. Ballard has pleaded guilty in the federal courts to making false and fraudulent claims (*Jour. A. M. A.*, Feb. 9, 1918, p. 408).

Sodium Bicarbonate.—Few patients will object to the taste of sodium bicarbonate if the required dose is administered dissolved in a convenient quantity of cold water. The taste may be disguised by dissolving the sodium bicarbonate in carbonated water or else by adding a little sugar and lemon juice to ordinary water. Sodium bicarbonate may also be prescribed in the form of tablets. Though it is better that these be allowed to dissolve in the mouth, in most cases they are swallowed without discomfort (*Jour. A. M. A.*, Feb. 9, 1918, p. 410).

Acetylsalicylic Acid and Phenol Salicylate Incompatible with Alkalies.—In the presence of moisture, acetylsalicylic acid is decomposed by magnesium oxide (calcined magnesia), as is also phenyl salicylate (salol). Hence these drugs should not be combined with magnesium oxide in a prescription (*Jour. A. M. A.*, Feb. 9, 1918, p. 410).

Fellows' Syrup, and Other Preparations of the Hypophosphites.—An advertisement for Fellows' Syrup reads: "Fellows' Syrup differs from other preparations of the hypophosphites. Leading clinicians in all parts of the world have long recognized this important fact. Have you? To insure results, prescribe the genuine ℞ Syr. Hypophos. Comp. Fellows'. Reject cheap and inefficient substitutes. Reject preparations 'just as good.'" In truth, Fellows' Syrup is not like the better preparations of this type, since after standing it contains a muddy looking deposit that any pharmaceutical tyro would be ashamed of. Examination of the literature used in the exploitation of Fellows' Syrup fails to disclose any evidence to show that it has therapeutic value. Not only is there an entire absence of any evidence of its therapeutic value, but there is an abundance of evidence that the hypophosphites are devoid of any such therapeutic effects as they were formerly reputed to have, and that they are, so far as any effect based on their phosphorus content is concerned, singularly inert. As the result of its investigation of the therapeutic effects of the hypophosphites, the Council on Pharmacy and Chemistry concluded: There is no reliable evidence that they exert a physiologic effect; it has not been demonstrated that they influence any pathologic process; they are not "foods." If they are of any use, that use has never been discovered (*Jour. A. M. A.*, Feb. 16, 1918, p. 478).

Calcium Iodide in Tuberculosis.—There appears to be no work to indicate that the intravenous administration of calcium iodide in tuberculosis is of value. It has not been demonstrated that tuberculosis is associated with a deficiency of calcium. On the other hand, experiments demonstrate that the administration of calcium does not change the calcium content of the blood. Furthermore, there is no evidence to warrant the intravenous administration of iodides (*Jour. A. M. A.*, Feb. 16, 1918, p. 481).

Bell-Ans (Papayans, Bell).—"Are you going to sit there and let the other folks eat up all the good things just because you are afraid to pitch in, when 2 or 3 Bell-Ans taken before and after the meal would enable you to enjoy your share of all that's coming without a bit of discomfort or distress? Bell-Ans has restored the pleasures of the table to thousands who say: 'I can now eat anything and plenty of it, too.'" The New York *Tribune* comments that such advertisement as this is not limited to the evil effects to the misguided individual who eats lobster and ice cream at midnight and trusts to Bell-Ans to atone for his indiscretion. The most serious effect of such reckless advice is the example which the advertising sets to other advertisers (*Jour. A. M. A.*, Feb. 23, 1918, p. 557).

Antiphlogistine.—A. G. Gould, M.D., plant physician to the Goodyear Tire and Rubber Company, writes that after corresponding with the physicians in charge, he finds incorrect the claims of the Denver Chemical Manufacturing Company, regarding the use of Antiphlogistine by certain establishments. He asks: Is there not some way that such exploitation of our large companies can be prevented? (*Jour. A. M. A.*, Feb. 23, 1918, p. 557).

Syphilodol.—According to the French Medicinal Company, Inc., which markets the product, Syphilodol "is a synthetic chemical product of silver, arsenic and antimony . . ." Nowhere in the advertising matter is there a more comprehensive statement regarding the composition of this "new synthetic" than that just quoted. The produce is being examined in the A. M. A. Chemical Laboratory; the examination having advanced sufficiently to show that Syphilodol contains considerable quantities of mercury. Although the advertising leaflet claims that the preparation is "the formula of the late Dr. Alfred Fournier of Paris" and has been exhaustively tested by Metchnikoff, a careful search of French medical journals fails to show any report on Syphilodol (*Jour. A. M. A.*, Feb. 23, 1918, p. 559.

Trousseau's Wine.—This obsolete combination of drugs acting on the heart and kidneys is made by maceration of digitalis, squill and juniper berries in wine and alcohol, and adding potassium acetate to the expressed liquid (*Jour. A. M. A.*, Feb. 23, 1918, p. 559).

Pyxol.—This is a proprietary preparation somewhat similar to the compound solution of cresol of the U. S. Pharmacopeia. In 1915 Pyxol was declared misbranded under the Insecticide Act (*Jour. A. M. A.*, Feb. 23, 1918, p. 559).

Luminal.—Chemically, Luminal is phenyl-ethylbarbituric acid, and differs from veronal only in that one ethyl group is replaced by a phenyl group. Luminal is claimed to be a useful hypnotic in nervous insomnia and conditions of excitement of the nervous system (*Jour. A. M. A.*, Feb. 23, 1918, p. 559).

THE PENNSYLVANIA MEDICAL JOURNAL

Official Organ of the Medical Society of the State of Pennsylvania

VOLUME XXI
NUMBER 7

ATHENS, PA., APRIL, 1918

SUBSCRIPTION:
$2.00 PER YEAR

ORIGINAL ARTICLES

ACIDOSIS *

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THE MEANING OF ACIDOSIS

During the course of normal metabolism acids in considerable amount are produced: carbonic, phosphoric and sulphuric as well as certain organic acids. The body possesses such an efficient mechanism for the neutralization and elimination of these acids that, under ordinary circumstances, the reserve alkalinity of the blood and tissues remains practically at a constant level. An excessive intake of acid, an excessive production of acid within the body, or a failure of any part of the defensive mechanism results in an increased activity of the defenses of the body against acids and, to some extent, in a depletion of the alkali reserve, or in other words, acidosis. The condition of acidosis may, therefore, be recognized by the increased activity of the defensive mechanism and by the finding of a depletion of the alkali reserve.

The modern conception of the term acidosis is a broader one than that of Naunyn,[1] who included only conditions accompanied by an excessive production of aceto-acetic and oxybutyric acids. It is also broader than that of Czerny and Keller,[2] who used the term to characterize a condition accompanied by an increased amount of urinary ammonia, this conception being based on the experiments of Walter,[3] who found an increased excretion of ammonia in the urine of dogs poisoned by hydrochloric acid. The term "relative acidosis," as used by Steinitz,[4] referred to a condition brought about through excessive loss of alkali from the body, but he never brought conclusive proof of the existence of the condition.

THE DEFENSES OF THE BODY AGAINST ACID

In order to have a clear conception of the phenomena of acidosis some knowledge of the regulatory mechanism of the body is essential. Inasmuch as the plasma differs but slightly in composition from the tissue juices throughout the body and as the condition of the various tissues, as regards acid base equilibrium, is reflected in the blood plasma it is, for practical purposes, only necessary to consider the regulatory mechanism of acid base equilibrium in the plasma. The most important constituent of the plasma, as far as acid base equilibrium is concerned, is sodium bicarbonate. The plasma may be considered as a solution of sodium bicarbonate of a strength of about 0.3 per cent. Such a solution circulating through the tissues of the body comes in contact with carbon dioxid in considerable amount; the carbon dioxid dissolves in the plasma and renders it slightly more acid.[5]

Pulmonary Ventilation. — As the plasma passes through the lungs, however, the excess of carbon dioxid is removed by pulmonary ventilation and the plasma again becomes more alkaline. If an excessive amount of carbonic acid is produced in the tissues, as after exercise, the ordinary pulmonary ventilation is insufficient to remove the excess of carbon dioxid and the plasma remains slightly more acid than normal. This change in reaction, although infinitesimal, is sufficient to stimulate the respiratory center to greater activity and the resultant increase in pulmonary ventilation accomplishes the removal of the excess of carbon dioxid. If, on the other hand, an acid, such as beta-oxybutyric or lactic, is poured into the plasma, as it passes through the tissues, a certain amount of the bicarbonate is neutralized and carbon dioxid is set free in solution. The excess of carbon dioxid is removed as before and the blood reaction returns to normal. Some bicarbonate has, however, been neutralized so that the plasma has become a weaker solution of bicarbonate. When this solution takes up carbon dioxid from the tissues its reaction becomes more acid with the same amount of dissolved carbon dioxid as formerly. Roughly speaking, if the bicarbonate of the plasma is reduced one half, only half as much carbonic acid can be carried in solution as formerly, if the reaction is to remain the same as before. By doubling the ventilation in the pulmonary alveoli the dissolved carbonic acid of the plasma may be diminished about one half; at the same time the concentration or tension of carbon dioxid in the pulmonary alveoli is also diminished one half. The carbon dioxid tension in the alveolar air, for this reason, is a measure of the extent to which the bicarbonate reserve of the plasma is depleted, and increased pulmonary ventilation is one of the symptoms of acidosis.

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* Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 27, 1917.

[1] Naunyn: Der Diabetes Mellitus, Vienna, 1906.

[2] Czerny and Keller: Jahrb. f. Kinderh., 1897, xlv, 274.

[3] Walter: Arch. f. exper. Path. u. Pharmakol., 1877, vii, 148.

[4] Steinitz: Jahrb. f. Kinderh., 1903, lvii, 689.

[5] During life the plasma probably never becomes actually acid, although its reaction may shift in the direction of acidity. By the term "more acid" as used here we really mean "less alkaline."

Increased pulmonary ventilation serves to prevent a significant change in the reaction of the blood, but it cannot prevent a depletion of the bicarbonate reserve of the plasma. This reserve eventually would be entirely exhausted were it not for other means of defense and for the provision for a replenishment of the alkali reserve.

Ammonia Production.—A certain proportion of the acids produced in the body are, under normal circumstances, neutralized by ammonia. With an increased production of acids in the body the ammonia is also increased and is an important factor in preventing the depletion of the bicarbonate reserve. The ammonia salts thus formed are excreted by the kidney. Hence, an increase of ammonia in the urine has come to be looked on as one of the laboratory evidences of acidosis.

Excretion of Acid by the Kidney.—The alkali reserve of the blood may be increased during its passage through the kidney, as a result of an excretion of acid in the urine. Only a small amount of acid is excreted in the free state, but a very considerable amount in the form of acid phosphate. The plasma, besides bicarbonate, contains a small amount of phosphates chiefly in the form of alkaline phosphates. The specific activity of the kidney allows the transformation of part of the alkaline phosphate into acid phosphate. The acid phosphate is excreted in the urine. The base thus spared serves to replenish the bicarbonate reserve. $Na_2HPO_4 + H_2O + CO_2 = NaH_2PO_4$ (excreted in urine) $+ HNaCO_3$ (remains in blood). The phosphates of the plasma are low, as the body is continuously excreting both acid and alkaline phosphate in the urine. When there is a necessity for excreting more acid the kidney responds by excreting a more acid urine; that is to say, the proportion of acid phosphate to alkaline phosphate is greater than under normal circumstances. There is, however, a limit to this process of acid excretion and a urine very much more acid than is excreted normally cannot be eliminated by the kidney. For this reason the determination of the acidity of the urine *per se* is not of great assistance in the diagnosis of acidosis.

RECOGNITION OF ACIDOSIS

As has been mentioned, acidosis may be recognized by an increased activity of the normal defenses of the body and by the finding of a depletion of the bicarbonate reserve of the blood plasma.

Symptoms.—In a certain number of well-marked cases the diagnosis may be made on the basis of symptoms, although in every case it is advisable to confirm the diagnosis by one of the simple laboratory methods. The only symptom that may be considered positively pathognomonic of acidosis is hyperpnea or deep breathing, the so-called "air hunger" of Kussmaul, the cause of which has already been explained. The breathing of acidosis is deep, it is not usually increased in rate, and differs markedly from the shallow rapid respiration of pneumonia or the labored breathing of obstruction. It is pauseless and though the several inspirations may vary in depth so that a modified Cheyne-Stokes respiration may be present, in general the excursions of the abdomen and thorax are nearly the same with succeeding respirations. The most striking feature is the amplitude of the respirations and the distinct effort with which they are accomplished. They are heaving, the chest rises and falls with each respiration and often the accessory muscles of respirations are brought into play. There is no cyanosis except in the presence of cardiorespiratory disease. A cherry-red coloration of the lips is occasionally observed but is of little diagnostic value. Drowsiness may be seen as an accompaniment of acidosis due to the acetone bodies. Vomiting is not a symptom of acidosis.

Laboratory Methods.—Several relatively simple laboratory methods for the detection and quantitative estimation of the degree of acidosis are now available. Among those best adapted for clinical use are: (1) The determination of the carbon dioxid tension in the alveolar air; (2) the determination of the bicarbonate or alkali reserve of the blood plasma, and (3) the "alkali tolerance" test.

The Determination of the CO_2 Tension in the Alveolar Air (Marriott's Method).[6]—This determination may be carried out in a few minutes' time at the bedside. It is applicable to infants as well as to older children and adults.

"In normal children at rest, the carbon dioxid tension in the alveolar air varies from 40 to 45 mm. Tensions between 30 and 35 mm. are indicative of a mild degree of acidosis. When the tension is as low as 20 mm., the individual may be considered in imminent danger. In coma, associated with acidosis, the tension may be as low as 8 or 10 mm. In infants, the tension of carbon dioxid is from 3 to 5 mm. lower than in older children or adults.

"Conditions other than acidosis may affect the carbon dioxid tension. Stimulation of the respiratory center leads to increased pulmonary ventilation and a consequent lowering of the alveolar carbon dioxid tension. Such stimulation may be brought about by caffein and possibly also by intracranial lesions. The respiratory center may be depressed by morphin; this leads to an increased carbon dioxid tension. Changes in the excitability of the respiratory center, however, are but rarely great enough to affect significantly the composition of the alveolar air." In diabetes, especially after treatment with alkalies, and during periods of partial starvation, the alveolar carbon dioxid tension may be lower than would be expected from the bicarbonate reserve of the blood.

"Changes in the pulmonary epithelium such as would prevent the air in the lungs from coming in equilibrium with the blood in the capillaries would, of necessity, affect the composition of the alveolar air. Since very little is known as yet regarding the exact effect of such changes, one is hardly justified in drawing conclusions regarding acidosis from the composition of the alveolar air in patients with pulmonary affections."

In the majority of cases of acidosis, the determination of the carbon dioxid of the alveolar air is sufficient, but where possible it is advisable to check the determination by an examination of the blood for the alkali reserve.

Determination of the Bicarbonate Reserve of the Plasma.—Van Slyke's Method.[7] By means of this method, the bicarbonate content of the plasma is determined by measuring the carbon dioxid given off after the addition of an excess of acid.

"Plasmas of normal adults contain from 55 to 78 volumes per cent. of combined carbon dioxid as determined by this method. In infants the normal values average about 10 per cent. lower than in adults. Figures lower than 50 in adults or 45 in infants are indicative of acidosis. The results if multiplied by 0.7 approximate alveolar carbon dioxid tension in millimeters determined according to the method already described."

Alkali Tolerance Test of Sellards.—When the bicarbonate content of the plasma is within normal limits, the administration of a small amount of sodium bicarbonate by mouth raises the amount in the blood and brings about an alteration of the reaction of the urine. The excess of bicarbonate is excreted and the normally acid urine becomes amphoteric or alkaline. When there is acidosis the bicarbonate of the plasma and of all of the body tissues is diminished. This must be replenished before bicarbonate given by mouth will be excreted by the kidney. For this reason the amount of soda that must be given to produce an amphoteric or alkaline urine is a measure of the depletion of the bicarbonate reserve of the body. With infants 2 to 3 grams of sodium bicarbonate is sufficient to cause an alkaline reaction of the urine, with older children and adults 5 grams. When acidosis is present much larger amounts of soda are necessary to bring about this change; four, five or even ten times as much being occasionally required.

The three methods just described are perhaps those most applicable for the routine clinical investigation of acidosis. Two other methods for the detection of acidosis which we have found of much value depend upon the use of indicators for the estimation of the alkali reserve of the serum.

Sellards' Serum Test.[8]—This method consists in the precipitation of the proteins of 1 c.c. of serum by 25 c.c. of neutral absolute alcohol.[9] The mixture is shaken and filtered through a dry acid-free filter paper. To the filtrate a drop of phenolphthalein solution is added and the fluid is evaporated to dryness on a water bath. Normally, a deep reddish purple color develops. In severe acidosis there is a faint pink color or no color at all, but the addition of a drop of water brings out a red color. In extreme acidosis the residue is colorless and remains colorless on adding water.

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[6] Marriott: Jour. A. M. A., 1916, lxvi, 1594.

[7] Van Slyke: Jour. Biol. Chem., 1917, xxx, 347.

[8] Sellards: Johns Hopkins Hosp. Bull., 1914, xxv, 101.

[9] The absolute alcohol is tested for alkalies by evaporating 50 c.c. with a drop of phenolphthalein. The residue should be colorless and remain so after the addition of a drop of distilled water. To test for acidity of the alcohol, 0.1 c.c. of N/100 sodium hydroxid is mixed with 50 c.c. of the alcohol, a drop of phenolphthalein is added and the fluid evaporated to dryness. The residue, if not red on going to dryness should become so after addition of a drop of water.

The Indicator-Dialysis Method for the Determination of Reserve Alkalinity.[10]—This consists in the dialysis of 0.5 c.c. of serum against a normal salt solution containing phenolsulphonephthalein as an indicator. Carbon dioxid is removed from the dialysate by an air current and the color of the solution is compared with that of standard tubes. Results are expressed in terms of hydrogen ion concentration and may be translated into terms of alveolar air carbon dioxid tension. For full details the reader is referred to the original paper.

The reaction, or hydrogen ion concentration of the blood, with its contained carbon dioxid, varies but slightly during life, and the measurement of this either by the dialysis indicator method or the more elaborate electric gas chain procedure is of academic rather than clinical interest. The reaction, after removal of carbon dioxid, is, however, a reliable measure of the alkali reserve.

Barcroft and Peters have devised a quantitative method for the detection of acidosis which has for its basis the fact that the combining power of hemoglobin for oxygen is dependent upon the reaction of the blood. In acidosis the combining power is regularly diminished. For the details of the method of determination reference is made to the original description.[11]

METHODS APPLICABLE ONLY TO SPECIAL TYPES OF ACIDOSIS

The methods that have been outlined above serve for the detection of acidosis from any cause. There are others that are applicable only to certain types of acidosis.

Acetone Bodies in the Urine.—In acidosis due to an over-production of acetone bodies, acetone, oxybutyric and aceto-acetic acid appear in the urine in sufficient amount to be detected by qualitative tests. But these are not enough to serve as a basis for the diagnosis of acidosis. Acetonuria is exceedingly common with sick children, it is almost regularly present in febrile disease and in any condition in which temporary inanition or starvation occurs. Very seldom is the production of the acetone bodies sufficient to cause a depletion of the alkali reserve. From acetonuria alone the diagnosis of acidosis should never be made, though, when the amount in the urine is very large, it should inspire a careful examination for additional evidence of acidosis. Severe and fatal acidosis may occur with no overproduction of the acetone bodies. Their absence from the urine is no evidence that acidosis is not present.

Ammonia Coefficient.—In acidosis due to increased production of organic acids or the ingestion of strong mineral acids, the excretion of ammonia is greater than the normal. A quantitative determination of the ammonia in the urine serves to indicate in a general way the quantity of abnormal acids that is being produced under such circumstances. In some other forms of acidosis, however, such as that occurring in the course of nephritis there is no increase in the ammonia excretion, indeed it may be distinctly lower than in health.

CLINICAL TYPES OF ACIDOSIS

Acidosis Due to Acetone Bodies.—When there is an overproduction of the acetone bodies, acidosis of a greater or less severity may result. The earliest recognized and best known cause of the type is diabetes.

In recurrent vomiting severe and even fatal acidosis may occur, although, in the majority of instances, even when the attack is prolonged, acidosis plays a very small, if any, part in the picture of the disease. The acetone bodies are found in the urine in very large amount. At times they are to be detected a few hours after the onset of vomiting, so early that their presence at these times can hardly be accounted for on the theory of starvation. Acetone may be detected in the breath and can be determined quantitatively in the blood. The accumulation of acetone bodies does not account for the vomiting nor, if acidosis is present, will treatment of the condition by alkali thereby necessarily bring the vomiting to a conclusion. The serious complication of acidosis may be overcome by alkalies, but the cause of the attack of vomiting is not removed.

Infants at the end of the first and in the second year may suffer from attacks of recurrent acidosis due to the overproduction of the acetone bodies. With these infants the vomiting may play a very subordinate rôle. There may, in addition, be slight diarrhea, but it is the manifestations of acidosis that dominate the picture. In pediatric practice this type of acidosis has not sufficiently been recognized. Unless vigorous treatment is instituted the attacks are likely to prove fatal. It is likely that this condition of recurrent acidosis bears a close relationship to recurrent vomiting.

There are other conditions in which an acidosis due to the acetone bodies may be found, in which the overproduction of the acetone bodies is not to be accounted for on the basis of starvation. In ileocolitis, an acidosis may develop with rapidity even though a moderate amount of food is being taken. After anesthesia acidosis sometimes occurs which cannot be referred to the withdrawal of food for a few hours. Acetonuria is a regular sequel of anesthesia, but severe acidosis is very exceptional. Acetone body acidosis may at times develop in the course of many different diseases. Thus, we have seen it with a tumor of the kidney, with metastases; with tetany, and with eczema. Under these circumstances it is apparently unrelated to the disease which it accompanies.

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[10] Marriott: Arch. Int. Med., 1916, xvii, 840.

[11] Barcroft: The Respiratory Function of the Blood, Cambridge, 1914.

Acidosis Due to Lactic Acid.—Lactic acid is produced in excess during severe exercise, during convulsions, with asphyxia, in phosphorus poisoning and in acute yellow atrophy of the liver. It has not been demonstrated that sufficient lactic acid is produced to deplete the alkali reserve to a very great extent.

Acidosis Due to Unknown Organic Acids.—A distinct acidosis is occasionally observed in lobar pneumonia. According to Palmer,[12] the acidosis is due to an organic acid of unknown composition whose presence may be demonstrated in the urine.

Acidosis Due to a Failure of the Regulatory Mechanism. Cardiorespiratory Disease.—Patients with certain congenital malformations of the heart and those suffering from decompensation in the course of valvular disease may develop acidosis as the result of failure to eliminate carbon dioxid from the blood.

In patients suffering from bronchial asthma and those with extensive pulmonary involvement, such as massive consolidation, double empyema, or pulmonary neoplasms, carbon dioxid may accumulate in the blood in amounts greater than normal. In such cases a carbon dioxid acidosis is present. There is increased stimulation of the respiratory center with resulting hyperpnea. The carbon dioxid tension in the alveolar air is diminished, but on account of the peculiar character of the acid causing the acidosis there is usually no diminution in the alkali-reserve of the plasma. For this reason this form of acidosis is usually not included in the consideration of acidosis and will not be referred to further. In some cases, as a result of the partial asphyxia, lactic acid may be produced and cause a slight diminution in the alkali reserve.

Acidosis of Renal Origin.—As has been explained, the ability of the kidneys to excrete acid, especially acid phosphate, is one of the chief defensive mechanisms of the body. Failure of this mechanism, even without increased production of acids results in acidosis. Occasionally, in nephritis, acidosis occurs and it has been shown[13] that when acidosis is present there is an accumulation of unexcreted phosphate in the blood plasma. There is no evidence that any abnormal acid is produced. In these cases of acidosis hyperpnea is present, the CO_2 tension in the alveolar air is lower than normal, the alkali reserve of the blood is depleted, and there is an increased "alkali tolerance." No acetone bodies are to be detected in the urine and the ammonia excretion is normal or diminished. Failure to produce ammonia to neutralize the retained acid is an additional factor in the production of the acidosis of nephritis,[14] and represents a weakening of another of the body's defenses.

Acidosis Occurring with Diarrhea.—It was recognized by Czerny[15] that some infants suffering from diarrhea and malnutrition had an alteration of the respiration much like that of animals poisoned by the introduction of acids. Later on with Keller, he showed that the urine of such infants frequently had a high ammonia nitrogen percentage. As this high ammonia nitrogen percentage had been shown by Walter to accompany poisoning by acids Czerny and Keller[16] spoke of the high ammonia nitrogen as an evidence of acidosis. They did not show an alteration in the acid base equilibrium and were unable to find in the urine any abnormal acid to which the acidosis could be referred. Steinitz[17] was able to show that in diarrhea there was a negative sodium balance as the result of an excessive elimination of sodium by the bowels. He did not show that acid radicles were not also lost and proof of an alkali loss as an explanation of the acidosis, a relative acidosis as he called it, is quite incomplete.

It has been sufficiently shown by Howland and Marriott,[18] and the work has been confirmed by Yllpö[19] and Schloss,[20] that, in the diarrhea of infants accompanied by profuse watery stools (cholera infantum, intoxication, etc.) a severe acidosis may result. It is not present with all cases, even severe cases of diarrhea, but it is a very serious, usually fatal complication. The carbon dioxid tension of alveolar air is low; frequently it sinks to 20 mm. or less, the alkali tolerance is much increased, the alkali reserve is greatly diminished and the hemoglobin dissociation curve is altered. Children suffering from this form of acidosis show, in addition to the other symptoms referable to the diarrhea, hyperpnea.

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[12] Jour. Exper. Med., 1917, xxvi, 495.

[13] Marriott and Howland: Arch. Int. Med., 1916, xviii, 708.

[14] Henderson and Palmer: Arch. Int. Med., 1915, xvi, 109.

[15] Czerny: Jahrb. f. Kinderh., 1897, xlv, 271.

[16] Czerny and Keller: loc. cit.

[17] Steinitz: loc. cit.

[18] Howland and Marriott: Amer. Jour. Dis. Child., 1916, xi, 309.

[19] Yllpö: Ztschr. f. Kinderh., 1916, xiv.

[20] Schloss: Amer. Jour. Dis. Child., 1917, xiii, 218.

The cause of the acidosis is not always plain. It does not depend upon an overproduction of the acetone bodies, for, while these are at times moderately increased, at other times they are within normal limits. Oliguria and anuria are frequent symptoms and we have found the inorganic phosphorus of the serum increased to a marked degree with some patients. It seems that insufficient elimination of acid is responsible for the development of acidosis in such cases, but there are others in which no increase of phosphorus in the serum can be demonstrated. In many respects the acidosis occurring with diarrhea in infants resembles that described by Sellards[21] occurring in Asiatic cholera.

Acidosis Due to the Ingestion of Acids.—In an ordinary mixed diet the ash is acid. Some articles of food give a much more acid ash than others, but a diet rich in such substances administered to a healthy person probably never leads to a significant degree of acidosis.

PROGNOSIS

The prognosis of acidosis depends upon the cause as well as upon the severity of the acidosis and also upon the underlying condition. To cure the acidosis is not necessarily to cure the disease of which the acidosis is a complication. In general, it may be said that the acetone body acidosis offers the best prognosis. With diabetes the prognosis is bad on account of the incurability of the fundamental condition. In attacks of recurrent vomiting and with the acetone body acidosis of small children, the prognosis is good if the condition is recognized early and vigorous treatment adopted. Even a moderate degree of acidosis in nephritis is much more serious. If the nephritis is acute and may be recovered from the outlook is far better than if chronic nephritis is present. When acidosis occurs in the course of diarrhea it adds a very dangerous complication to an already serious condition. With acidosis of a severe grade, in such cases, recovery is unusual.

TREATMENT

The treatment of acidosis is to prevent the production of more acids, whenever possible; to replenish the alkali reserve, and to eliminate the acids and their salts.

In diabetes the production of acids is to be prevented by a strict adherence to a dietary regime. With recurrent vomiting, and with vomiting or rapid inanition from other causes, in older children glucose solutions intravenously are theoretically indicated, especially if the blood sugar shows a tendency to fall. With the development of acetone body acidosis, glucose should be given in all cases except those due to diabetes. The glucose may be given by mouth, by rectum or intravenously. If given by mouth, it may be administered in a 5 to 10 per cent. solution every two to four hours, in quantities depending upon the age of the child and the tolerance of the gastro-intestinal tract. When administered by rectum a 5 per cent. solution is to be employed, which may be injected in large amounts at long intervals, or better by the drip method if tolerated. By this latter method as much as a liter may be absorbed in twenty-four hours.

For intravenous use a 5 or 10 per cent. solution may be employed and, depending upon the size of the child, from 75 to 300 c.c. injected at one time.

Alkali Therapy.—In all forms of acidosis alkalies are indicated. The best to employ is bicarbonate of soda, to replenish the alkali reserve. The soda may be administered by mouth or intravenously. Administration by rectum or subcutaneously is to be avoided if possible. By mouth, from one to four grams may be given at a time in watery solution. The intervals should usually not be less than two hours. In many instances vomiting renders administration by mouth impossible. Under such circumstances the intravenous method should be used. A 4 per cent. solution is usually employed made with freshly sterilized water. When a solution of sodium bicarbonate is boiled carbon dioxid is given off and sodium carbonate is formed. This is much more irritating than the bicarbonate, and is apt to cause sloughing of the tissues if any of the fluid escapes into them. For this reason it has been advised to reconvert the carbonate into bicarbonate by passing a current of carbon dioxid through the solution until it is no longer colored by a few drops of phenolphthalein. Oscar Schloss has found that sodium bicarbonate in bulk is always sterile. It is probably therefore sufficient to add the bicarbonate with proper precautions to sterile water. The amount of the solution to be injected depends upon the severity of the acidosis and the size of the child. In small infants not more than 75 to 100 c.c. can be injected at one time without the danger of throwing too great a burden upon a damaged circulatory apparatus. To older children as much as 300 c.c. may be administered. More than one injection may be necessary.

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[21] Sellards: Phil. Jour. Sci. Sec. B, 1911, vi, 53.

It is impossible to estimate accurately beforehand how much soda is necessary. The severer forms necessarily require more soda than the milder. Each case, however, must be followed by one or more of the various tests until there is a return to normal of the alkali reserve. The simplest indication that sufficient alkali has been given is the shifting of the reaction of the urine to normal. When the urine has become amphoteric or alkaline to litmus sufficient soda has been given; in fact, a slight excess. No more should be given unless the urine becomes more acid than normal. Other indicators such as brom-cresol purple (dibromcresolsulphonephthalein[22]) allow this point to be accurately determined. A safe rule in the treatment of acidosis is to administer soda until the urine takes on a purple color when a few drops of an alcoholic solution of brom-cresol purple are added. It should be kept at this reaction. With the milder forms of acetone body acidosis, i. e., when the carbon dioxid tension of the alveolar air is above 30 mm., recovery is usually spontaneous and soda is unnecessary. With acidosis of other types and especially that occurring with diarrhea, energetic treatment from the outset is imperative. Indeed it is wise to give to patients with severe diarrhea soda as a prophylactic measure endeavoring to keep the urine at about the normal reaction. There is little danger in giving an excess of soda. Edema is frequently observed after soda administration, but in our experience is not a dangerous sequel. At times the administration of soda to younger children causes tetany as shown by carpopedal spasm, by the electrical reactions, and by a low calcium content of the blood serum. Convulsions due to the same causes are at times encountered. With a cessation of the soda medication a return to normal conditions rapidly occurs. When massive doses of soda are to be administered to young children there are theoretical as well as practical reasons for administering magnesium sulphate subcutaneously, as in the treatment of idiopathic tetany.

Water Administration.—In all forms of acidosis water is urgently required for the elimination of acids whether neutralized or unneutralized. The water is to be given by mouth in as large amounts as can be borne. Vomiting frequently makes oral administration impossible. The choice is then between rectal, intravenous, subcutaneous or intraperitoneal administration of normal saline solution. If diarrhea is present or the rectum is intolerant, rectal administration is out of the question. Intravenous injection is unsatisfactory for the reason that it must frequently be repeated owing to the small amount that can be given at one time. Hypodermoclysis is unsatisfactory for the same reason. With infants, especially when suffering from diarrhea and the accompanying desiccation, the intraperitoneal injection of saline solution is frequently life saving. The injection is made with a short needle, with a short bevel either in the median line below the umbilicus or outside the left rectus muscle about the height of the umbilicus. The fluid should be injected slowly with all aseptic precautions. As much as 300 c.c. may be given to a small infant. There is no resulting discomfort and the fluid is absorbed gradually without throwing any strain on the circulation. It may be repeated several times a day.

The successful treatment of acidosis depends upon an early appreciation of its presence, a correct diagnosis of the type and discriminating judgment in the employment of means sufficient to overcome the disturbance.

Johns Hopkins Hospital.

DISCUSSION

Dr. A. A. Howell, Philadelphia: I want to thank Dr. Marriott very much for this illustration of just what occurs in acidosis. Personally I have never derived much benefit from the advances that occur from time to time in medicine until I am able to picture fairly well what is occurring in these cases. I have been reading with much interest in the last couple of years of the work on acidosis but this is the first time I have ever seen the changes which take place demonstrated in this way. I think we will all agree that what Dr. Marriott has shown us will remain indefinitely in our minds. When we have a case of acidosis we shall not have a complex puzzling picture in which we have in the past empirically given sodium bicarbonate. We must realize that the question has been reduced to a basis of neutralization in which we can be positive we are doing the right thing. It is only fair to say that we should not attempt to go very far in the treatment of acidosis without the special apparatus to determine the presence of the acidosis. We should not think of this any more than of treating blood pressure without a blood pressure machine. The apparatus of which Dr. Marriott speaks, I am ashamed to say, I have in my office and have not used it once, though I have been using it in the hospital and dispensary. In our own offices if we do not have assistants it is hard to find the necessary time. We have at our disposal a very easy and simple means which we all can comprehend and should use. I think it is directly up to those of us who are treating the people of moderate means to use the method so clearly demonstrated to us today. Personally, I should like to express my appreciation of the program of today and also of the other days of the meeting. I am sorry to say that I have never before attended a state medical meeting. The meeting has been a delight to me. I have heard wonderful papers, and I think the self-complacency with which I have looked on my own efforts has been dissipated and I know I am coming again.

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[22] Made by Hynson, Westcott and Dunning, Baltimore.

THORACIC ANEURYSMS

A BRIEF CLINICAL REVIEW OF THE SUBJECT FROM A DIAGNOSTIC STANDPOINT *

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SUMMARY

The object of this brief paper is principally to call attention to an excellent clinical method suggested by Dr. Herbert French of London of diagnosing thoracic aneurysms by subdividing the thoracic aorta into sections according to the part from which the aneurysm is bulging. (Charts and diagrams were exhibited to illustrate Dr. French's points.)

In the confines of a paper of ten minutes the subject of thoracic aneurysm can be intelligently discussed only by selecting certain features of the subject and specializing a little on them. Typical and well-advanced cases of aneurysm, especially since we now have the use of the roentgen-ray picture to assist us, offer at present to any careful internist comparatively little difficulty in diagnosis. It is the diagnosis of atypical and early aneurysms that so often puzzles us and presents us with so many difficulties. It is concerning some of these difficulties that this brief paper will chiefly deal.

Dr. James Mackenzie of London was one of the first prominent internists to point out the interesting fact that the most prominent defect of the modern textbooks was that they did not draw a distinct line between early and late symptoms in disease, and as they were largely written by men who were accustomed to seeing (chiefly in hospitals) the terminal and not the early symptoms of disease, that they chiefly laid stress and wrote about the symptoms that they were accustomed to see; viz., the terminal ones. The above observation is particularly true in the symptomatology of aneurysm.

For the past few years I have profited very much in the diagnosis of atypical or difficult cases by availing myself of an excellent suggestion which some internist of great experience made me several years ago. He said, "You will find clinically that 80 per cent. of all obscure chronic and puzzling cases are usually due to three diseases, lues, tuberculosis and new growth; try first to eliminate these three as an etiologic factor and you will find, if successful, that you will then have to deal with only 20 per cent. of comparatively rare and unusual conditions."

Early in 1915 Dr. Herbert French of Guy's Hospital, London, the author of one of the best practical books on diagnosis of which I have any knowledge, gave before his students a number of clinical lectures on the subject of syphilis of the cardiovascular system. These lectures were printed in pamphlet form but, owing to the war and various other causes, have not had a very extensive circulation, at least in this country. Hence, I am availing myself in my brief paper of the privilege of quoting liberally from a copy which he sent me. The charts which accompany this paper and which I am showing today are taken from his lectures. This pamphlet is full of the most interesting etiologic factors which are involved in syphilitic disease of the cardiovascular system, but I will only quote here what he says about the diagnosis of thoracic aneurysms. After pointing out the well-known fact that when a person is suffering from aneursym of the aorta it is almost certain that he has had syphilis, just as, when tabes dorsalis develops, it is practically certain that there has been syphilis in the past, notwithstanding any history that the patient may give to the contrary, he says that although there are probably a few exceptions to both rules, that the exceptions are, he thinks, very rare. He then goes on to point out the practical value of not considering aneurysm of the aorta in its entirety, but to study the symptoms of aneurysm by subdividing the aorta from a clinical point of view into sections according to the part of the aorta from which the aneurysm is bulging. An aneurysm projecting in a particular site may produce symptoms and signs which it is not possible for an aneurysm in some other site to produce at all; so in a broad way he goes on to classify the types of symptoms to which an aneurysm can give rise into five groups, according to the anatomic situation of

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* Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

the aneurysm itself. Following is his classification of the groups: (1) when the aneurysm affects that part of the aorta which lies between the aortic valves and the origin of the innominate artery; (2) when the aneurysm arises from the next inch or two of the aorta, namely, the first part of the transverse arch, including the origin of the innominate artery; (3) when the aneurysm involves the distal half of the arch of the aorta in the part corresponding roughly with the origin of the left subclavian artery; (4) when the aneurysm arises from the descending thoracic aorta beyond the level of the left subclavian artery; (5) when the aneurysm arises from the abdominal aorta.

He says that from a clinical standpoint there is little to worry about as to whether an aneurysm is fusiform or saccular, and that dissecting aneurysms are so rare and have such acute and generally fatal symptoms that they do not often have to be considered. He then further simplifies the matter of diagnosis of aneurysms by his statement that aneurysms of the abdominal aorta are very rare compared with thoracic aneurysms, and that when they do occur they nearly always occur at the same site, namely somewhere about the origin of the celiac axis arteries. He does, however, in discussing abdominal aneurysms point out one very interesting clinical fact; that diagnosis here is either exceedingly easy or it is so difficult as to be almost impossible in those cases in which the definite expansile pulsation of the tumor cannot be felt owing to the aneurysm, instead of bulging forward, very often bulges backward or laterally, filling in the concave space beside the vertebrae and cannot be felt, and unless it erodes the vertebrae it produces no symptoms.

It was only the day before yesterday, while making rounds in the Roosevelt Hospital in New York with Dr. Fleming, that I saw an excellent example of this kind in which the diagnosis was not made until after death. The patient had been operated on successfully for an acute appendicitis, but died suddenly a few days later. The autopsy revealed a large posterior aneurysm of the aorta which had ruptured, producing sudden death. Its existence had not been suspected during life nor had the surgeon noticed it during his operation.

Following are the four figures which he gives, together with his detailed description of the symptoms produced:

Type 1 (*Fig. 1*).—*Aneurysm affecting that part of the aorta which lies between the aortic valves and the origin of the innominate artery.*

An aneurysm in this position may be quite small and lie almost entirely inside the pericardium, producing neither symptoms nor physical signs until sudden rupture occurs, as was the case with the specimen I showed you at the beginning of our previous lecture. Such a relatively minute aneurysm is practically undiagnosable. If of a larger size it will project to the right of the upper part of the sternum and cause an impairment of percussion note, especially in the second right intercostal space to the right of the sternum, and you would be on the watch for expansile pulsation in this same space, such pulsation being sometimes much more obvious to the ear placed on the chest wall than it is to the hand laid flat on the chest. In the detection of small degrees of pulsation the ear used in this way is a most valuable aid in diagnosis. The question of bruits in relationship to this or any other aneurysm I will discuss later. If the aneurysm we are now discussing produces any pain at all it will be in the front of the chest near the base of the heart, and to the right side of the sternum rather than to the left; in addition to which the patient will very likely suffer from attacks of acute angina pectoris coming on in paroxysms, with a gripping sensation in the precordial region and pain radiating from near the apex of the heart inwards towards the sternum, upwards to the left shoulder and extending a variable distance down the left arm, generally on the ulnar side, usually stopping at or near the elbow, but occasionally extending as low down as the little and ring fingers of the left hand.

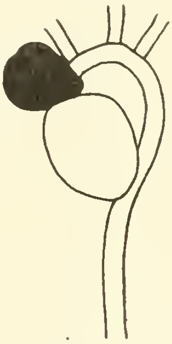

Fig. 1.—Aneurysm of the first part of the aorta, close above the aortic valves.

There will be a tendency for the superior vena cava to be obstructed by the aneurysm, so that there may be some cyanosis out of proportion to any tendency there is to heart failure, and in bad cases there may be swelling of the face, neck and arms, with distention of the superficial veins on the chest wall. On the whole, however, although an aneurysm in this position must nearly always interfere with the superior vena cava to some extent, it is remarkable how much less the latter becomes obstructed by aneurysm than it does by new growth; so that it is generally a good argument to say that if the alternative diagnoses lie between intrathoracic aneurysm and intrathoracic new growth, the greater the distention of the veins on the chest wall the more likely is the condition to be one of new growth than of aneurysm. Perhaps the reason for this is that the aneurysm, as it enlarges, pushes the superior vena cava outwards away from itself, but does not actually alter its wall, or, at any rate, its endothelial lining, so that there is not the same tendency to clotting within the superior vena cava that there is when there is new growth which, besides actually pushing the superior vena cava away from its normal position, infiltrates its wall and very often alters the endothelial lining by causing sprouts of new growth to project into the interior of the vein. It is particularly when the endothelium has been interfered with in this way by growth that thrombosis is added to the other factor in the occlusion, whereas in the case of an aneurysm such thrombosis is relatively less likely.

The right upper bronchus is apt to be interfered with in a similar way, especially if the aneurysm bulges backwards; so that one would be on the watch for impairment of note over the right upper lobe with harshness of breathing there, and possibly a few crepitations at the right apex which might easily simulate phthisis, especially as the obstruction to the bronchus by the aneurysm causes a little hemoptysis occasionally as well.

An aneurysm in the position we are discussing now will not, if you think of it, interfere with the cervical sympathetic on either side, so that the pupils would be equal.

It will not interfere with either recurrent laryngeal nerve, so that there is no vocal cord paralysis.

It will not, as a rule, be sufficiently adherent to the main respiratory passages to cause tracheal tugging.

It will not be far enough back to stenose the esophagus.

It will not interfere with the origin of either the innominate or the left subclavian veins, so that the radical pulses will in all probability be equal; it will not erode the vertebræ, so that there will be no pain in the back, and it will not interfere with the right brachial plexus, so that there will be no pain referred down the right arm.

In short, the things you would expect it to do are to cause pulsation to the right of the sternum in the second right intercostal space; impairment of percussion note in this same space; possibly interference with the right upper bronchus, and perhaps interference with the superior vena cava, and it will not produce the other signs that are to be expected from an aneurysm in any other position.

AN ANEURYSM IN POSITION 1 (FIG. 1)

Will Be Apt to Cause	Will Probably Not Cause
Angina pectoris.	Inequality of radial pulses.
Partial stenosis of the superior vena cava.	Inequality of pupils.
Impairment of note in 2d right intercostal space.	Pain down right arm.
Expansile pulsation and perhaps tumor in 2d right intercostal space.	'Tracheal tugging.
Pain to the right of upper part of sternum.	Ptosis.
Abnormal physical signs in right upper lobe.	Vocal cord paralysis.
	Stenosis of esophagus.
	Pain in the back.
	Palpable pulsation on deep palpation in suprasternal notch.

Type 2 (Fig. 2).—Aneurysm arising in the first part of the transverse arch, including the origin of the innominate artery.

This aneurysm, like the one we have just discussed, will tend to cause pulsation and, perhaps, a tumor in the second, and probably also the first right intercostal space close to the sternum, with impairment of note to the right of the sternum in these spaces. It will also tend to stenose the superior vena cava; it may interfere with the right upper bronchus and cause abnormal physical signs in the upper lobe of the right lung, but in addition to the above it will tend to interfere with the origin of the innominate artery, and so cause the right radial pulse to be delayed behind the left, or even to be actually smaller than the left. It will very likely be adherent to the trachea so as to produce tracheal tugging, which is tested for by holding the hyoid bone between two fingers, whilst the patient's chin is slightly raised; and it may interfere with the right cervical sympathetic and so cause the pupils to be unequal; irritation of the right sympathetic causing the pupil to be dilated, paralysis of it causing it to become constricted, and there may be slight ptosis on the right side also.

Besides the pain the patient may complain of at the site of the aneurysm itself, the latter will very often bulge sufficiently upwards to interfere with the lower branches of the brachial plexus, and it is not an uncommon thing to find such a patient complaining of very severe pains in his right shoulder region and in the right upper arm, even radiating from thence down the ulnar side of his forearm to his right little and ring fingers. In some cases the interference with the brachial plexus may be so considerable that the muscles supplied from the lower branches of it atrophy, and from the severity of the pain, and the consequent sleepless nights, the patient's health often suffers much more from this aneurysm than it does from one closer to the aortic valves.

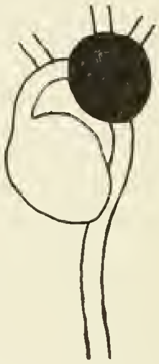

Fig. 2.—An aneurysm of the first part of the transverse arch of the aorta.

AN ANEURYSM IN POSITION 2 (FIG. 2)

Will Be Apt to Cause	Will Probably Not Cause
Angina pectoris.	Stenosis of the esophagus.
Partial stenosis of the superior vena cava.	Pain in the back.
Impairment of note in 2d right intercostal space.	Vocal cord paralysis (though rarely the right vocal cord may be paralyzed if the aneurysm is large).
Expansile pulsation and perhaps tumor in 2d right intercostal space.	
Pain to the right of upper part of sternum.	
Abnormal physical signs in right upper lobe.	
Right radial pulse smaller then left or delayed behind left.	
Pain down the right arm.	
Tracheal tugging.	
Palpable pulsation on deep palpation in suprasternal notch.	
Possibly inequality of the pupils.	
Right-sided ptosis.	

One would not expect from this aneurysm any stenosis of the esophagus, nor any interference with the recurrent laryngeal nerve on the left side; vocal cord paralysis is therefore very unusual, but in rare instances the aneurysm bulges up sufficiently into the neck to interfere with the right recurrent laryngeal nerve where it passes around the right subclavian artery, and then right vocal cord paralysis results. In such a case, however, the diagnosis would be easy because there would be a pulsatile tumor in the root of the neck on the right side.

When the aneurysm extends further along the transverse arch it is sometimes possible to depress the fingers into the suprasternal notch to palpate a pulsatile mass here.

The vertebræ are seldom eroded by an aneurysm in this position, so that pain in the back is not commonly complained of.

Type 3 (Fig. 3).—Aneurysm involving the distal half of the arch of the aorta in the part corresponding roughly with the origin of the left subclavian artery.

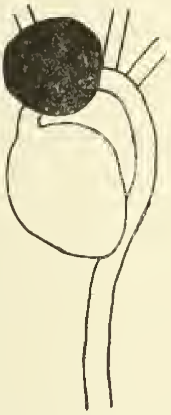

Fig. 3.—Aneurysm of the distal part of the arch of the aorta.

The transverse arch of the aorta turns backwards almost more than it does to the left, so that an aneurysm in this third position seldom gives rise to an expansile tumor that can be felt, unless the aneurysm is simply huge. I have seen such huge aneurysms in this position giving rise to pulsation to the left of the sternum in the upper part of the chest, but to get a tumor with expansile pulsation here is rare. On the other hand, the pressure signs are numerous. It is from an aneurysm in this position that one expects to find paralysis of the left recurrent laryngeal nerve and consequent paralysis of the left vocal cord; it also tends to interfere with the left cervical sympathetic, and so cause inequality of the pupils, the left pupil being either much smaller or much larger than the right. There will also tend to be ptosis of the left upper eyelid. When the origin of the left subclavian artery is involved, the left radial pulse will tend to be delayed behind the right, or to be absolutely smaller in volume than the right. There may be pain radiating down the left arm from interference with the lower branches of the left brachial plexus, but more commonly the aneurysm erodes the vertebræ, and the main site of pain is, consequently, in the upper part of the left side of the back, radiating perhaps to any of the branches of the upper intercostal nerves. The aneurysm is apt to interfere with the left upper bronchus, so that one looks for impairment of note, vesicular murmur, and voice sounds, together perhaps with crepitations in the left upper lobe, and phthisis may be simulated here, and it is possible for the aneurysm to stenose the esophagus and cause dysphagia, simulating epithelioma of the esophagus. It is an aneurysm in this position, therefore, which causes a maximum of pressure signs without a pulsatile tumor. It may even cause tracheal tugging, though, as a rule, the aneurysm is too much to the left to make this a prominent sign. So close together are the main bronchi at the bifurcation of the trachea that, although the aneurysm is to the left, some irregular dilatation of it may cause interference with the right bronchus as well as or instead of, the left, so that abnormal lung signs on the right side may be present. Almost the only pressure signs associated with aneurysm which this particular one does not produce are those connected with interference with the superior vena cava.

AN ANEURYSM IN POSITION 3 (FIG. 3)

Will Be Apt to Cause	Will Probably Not Cause
Pain in the upper part of the dorsal region of the back.	Interference with superior vena cava.
Pain down left arm.	Tumor dull to percussion with expansile pulsation (unless aneurysm huge).
Paralysis of left vocal cord.	Pain down right arm.
Left-sided cervical sympathetic paralysis.	
Inequality of pupils.	
Ptosis of left side.	
Stenosis of esophagus, rarely.	
Tracheal tugging, rarely.	
Left pulse delayed behind or smaller then right.	
Interference with one or other bronchus with impaired note over corresponding lung.	

Type 4 (Fig. 4).—Aneurysm arising from the descending thoracic aorta beyond the level of the left subclavian artery.

This, the last of the four types into which I have divided thoracic aneurysms, is one of the hardest to recognize clinically without the assistance of accessory diagnostic means such as the use of the roentgen rays. The aneurysm is too far down the aorta to cause inequality of the pulses, paralysis of either vocal cord, inequality of the pupils, interference with the superior vena cava, tracheal tugging; and it is too deep seated, unless the aneurysm is huge, to cause any pulsatile tumor. If you will think of it, almost the only pressure signs that an aneurysm in this position can produce are those which result from (*a*) interference with the vertebræ and intercostal nerves; (*b*) from partial stenosis of the lower left main bronchus; and (*c*) interference with the esophagus.

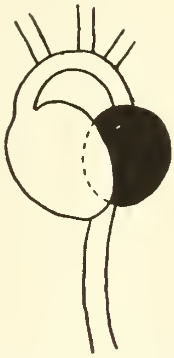

Fig. 4.—Aneurysm of the descending thoracic aorta.

> Stenosis of the esophagus by an aneurysm is far from common, for the esophagus is a mobile tube which may be displaced far from its normal site without necessarily being obstructed; but when an aneurysm of the descending thoracic aorta stenoses the esophagus as it may do, then epithelioma may be simulated closely, and it is on this account that one should be so careful in excluding this difficult type of aneurysm before passing bougies or other instruments in cases of supposed epithelioma of .the esophagus.
>
> Interference with the left lower bronchus will cause impairment of note over the left lower lobe, coughing and perhaps râles, and the patient may be suspected of having pleurisy or some fibrosis of the lower lobe from former pleurisy; the lung signs attracting so much attention that the possibility of aneurysm obstructing a bronchus may not occur to one. One cannot emphasize too much the need for roentgen-ray examination of the chest in all chronic lung cases.
>
> Interference with the bodies of the vertebræ and the intercostal nerves between them on the left side will cause severe pain in the back, generally in the mid or lower dorsal region; this pain often radiating around the left side of the chest and being referred either to the lower sternal region in front, or to the anterior or midaxillary region at the side; so-called intercostal neuralgia may be the suggested diagnosis if full steps are not taken to exclude the possibility of a much more serious cause for the pains.
>
> You will see, therefore, that really the only things which an aneurysm in this position will do to call attention to its presence are: first, to produce abnormal physical signs in the lower lobe of the left lung, and pain in the left mid lower or dorsal region, and in the left side of the chest, comparatively low down; together, perhaps, but only exceptionally, with evidence of dysphagia. It is not surprising, therefore, that it is an aneurysm in this position which is the one most often missed.

AN ANEURYSM IN POSITION 4 (FIG. 4)

Will Be Apt to Cause	Will Probably Not Cause
Pain in the back, especially in mid-dorsal or lower sternal region rediating like intercostal neuralgia round right side of chest.	Tumor dull to percussion with expansile pulsation.
	Inequality of radial pulses.
	Unequal pupils.
	Ptosis.
Interference with left lower bronchus with abnormal physical signs in lower lobe of left lung.	Vocal cord paralysis.
	Stenosis of superior vena cava.
	Pain down left arm.
Stenosis of the esophagus, rarely.	Pain down right arm.
	Tracheal tugging.

In conclusion Dr. French mentions three rather interesting facts: first, that it is not uncommon for the same patient to have two aneurysms, and that he has two may sometimes be obvious from the clinical signs even without an x-ray examination; hence in estimating the value of the symptoms giving the possibility of this occurrence must not be lost sight of, and second, he has the following to say regarding the relationship of bruits to aneurysms:

> I find that most students are afraid to diagnose aneurysm unless there is a bruit, as though they thought that a bruit was an almost essential concomitant of aneurysm. This, however, is so far from being the case that I would even go so far as to say that it is exceptional rather than the rule to find a bruit over an aneurysm, or, at any rate, a bruit that is actually caused by the aneurysm. Very often, of course, the syphilis which has produced the aneurysm has also affected the aortic valves, and therefore one very often has a typical to-and-fro bruit of aortic regurgitation with some stenosis in the same patient who has an aneurysm; or, again, there may be myocardial changes in the heart, with a systolic bruit resulting from changes in the cavities and their relationship to the size of the valves. These bruits, however, are merely associated with, not caused by, the aneurysm; they are due to an associated syphilitic change other than the aneurysm; and I think you will understand that an aneurysm does not, as a rule, produce a bruit if you think that a bruit, for its occurrence, depends on vibrations caused by the blood not running smoothly through the passages that it has to traverse. If one were to produce an aneurysm suddenly there would at that time almost certainly be a bruit over it, for the blood would eddy and swirl in some part of the aneurysmal sac, and this eddying and swirling would produce vibrations that would be audible as a bruit. If, however, this aneurysm were to remain more or less of the same size for a while, in the very places where there was the most eddy and swirl there would be a tendency for deposition of blood-clot, so that the uneven parts of the aneurysmal sac would be, as it were, plastered up with clot until the blood in its transit through and past the sac would run smoothly in spite of its having to go through or past the abnormal bulge. As soon as there is a restoration to smooth running of the blood in this way there will be a disappearance of that factor which is necessary for the production of a bruit, and, consequently, no bruit will be heard. Of course, if one were to alter the shape of the aneurysmal sac by pressing its outer surface firmly inward with the stethoscope, the smooth running of the blood would again be interfered with, and a bruit would result; but when one listens to the aneurysm without such physical pressure of the stethoscope being applied, if your experience proves to be the same as mine it will tell you that aneurysmal bruits are heard only in a small percentage of the cases.

His third point deals with the relationship of the size of the heart to aneurysms, and his conclusions are that in spite of the belief that aneurysm is an adequate cause for hypertrophy of the heart, that the patient's cardiac impulse is usually in its normal position, and when cardiac hypertrophy is found that it is due to other causes, viz.: associated syphilitic changes in the muscles of the heart or to syphilitic aortic regurgitation or possibly to the hard physical labor that the patient was accustomed to undertake in the years preceding the development of the aneurysm, a hypertrophy which is in no way an essential result of the aneurysm itself.

CONCLUSIONS

The diagnosis of thoracic aneurysm of the aorta as far as symptoms are concerned depends very largely on its location. The early symptoms apt to be produced in locations 1, 2, 3, and 4 are so beautifully brought out in my quotations from his paper and in the charts exhibited that they need not be again repeated. It might, however, be well to again emphasize the fact that an early diagnosis of thoracic aortic aneurysm is far more difficult in location, being practically undiagnosable in the first section of this location owing to the fact that it is often quite small and lies almost entirely within the pericardium and produces neither symptoms nor physical signs until sudden rupture occurs. If, however, in this location it is of larger size, it will project to the right of the upper part of the sternum and it may produce a pulsation in this location in the second right intercostal space, and some impairment of the percussion note in this same space with possibly some interference with the right upper bronchus and the superior vena cava.

With these symptoms it is wise to consider the possibility of an aneurysm and have the chest fluoroscoped.

As far as my personal experience goes in differential diagnosis, three conditions most difficult to differentiate from aneurysm are tuberculosis, intrathoracic new growth, and chronic myocarditis in the breakdown stage.

A case illustrating this last point was beautifully reported by Dr. Walter Hamburger in the Medical Clinics of Chicago in July, 1915.

Fifth Avenue and St. James Street.

DISCUSSION

Dr. A. A. Howell, Philadelphia: It has always struck me that in mediastinal work our only protection against overlooking pathological conditions is a systematic method of approaching the mediastinum. We always think of the heart with its lesions. Our effort should not cease here; the pericardium and its lesions and the aorta and its peculiar lesions should follow as a matter of course. Still further, it is important to think of the lymph glands in the mediastinum and in viewing the case to decide whether there is anything wrong with them. The thymus gland is rarely thought of and its lesions are proportionately apt to be overlooked. Rare conditions are easily overlooked unless one is alive to the possibility of their presence.

Dr. Henry M. Hall, Pittsburgh: In a case brought to mind by Dr. Mercur's reference to aneurysm without typical symptoms, it was found at necropsy that the aneurysm had penetrated to the interior of the left lung. The patient died of sudden and profuse hemorrhage which had been preceded eight months before by smaller hemorrhages, which were also not from the aneurysm itself but from the lung tissue. The patient was not only luetic but had (probably tubercular) induration about sac in the surrounding lung tissue. The aneurysmal sac was filled with laminated blood clot. In the absence of typical symptoms I had succeeded in making a diagnosis of "possible" aneurysm. A report of the specimen was kindly made for me by Dr. E. W. Willetts.

Dr. C. C. Huston, Knox: Dr. Mercur's paper recalls to my mind a case in my own practice, in which we made the diagnosis, by the help of the roentgenologist, of aneurysm. The case was rather atypical in symptomatology. The location of the aneurysm, as nearly as I could read the roentgenogram, would be in the third classification. The patient had been through the hands of a number of physicians for "stomach trouble." In going over the mediastinum with the stethoscope I heard a bruit just above the epigastrium. Under deep pressure it was heard under the lower edge of the sternum. I made a diagnosis of probable aneurysm which was confirmed by the roentgenologist. The three marked symptoms in this case were pain at the ensiform, nausea and vomiting. There may or may not have been gastric crises. I took the blood for a Wassermann test but because of the very warm weather it was autolysated when it reached the laboratory and the patient since has refused a sample. The pain at the end of the sternum was followed by a feeling of heat going over the body, practically the same as the hot flashes at the climacteric. There was no tracheal tugging that I could discover. The case is now cured according to symptoms and the finding of the roentgen ray since treatment.

About three years ago Abrams of San Francisco reported a series of thirty-three cases with twenty-seven symptomatic cures. Of the majority of these he had plates, made before and after recovery; some were cases of very far advanced aneurysm. I could find nothing confirmatory of lues in my patient. She is 58 years of age and the mother of five healthy children. One baby died at the age of 8 weeks of pneumonia of rather atypical history. I would also emphasize Dr. Mercur's statement that any good internist should diagnose thoracic aneurysm. Another case which we had was one of thoracic and abdominal aneurysm. The aneurysm went down through the diaphragm to the celiac axis. In this case we had an old murmur at the heart, and this it was that mixed us up in getting the bruit. The shape of the aneurysm was such that the bruit was not transmitted as usual. The case gave a negative Wassermann. The patient was treated by the method suggested by Dr. Abrams with marked improvement. Unfortunately no plates were made of the large aneurysm of the thoracic and abdominal aorta.

Dr. Philip Marvel, Atlantic City, N. J.: This paper is exceedingly interesting from the standpoint of the probable cause and development of some forms of aneurysm. Those of us making fluoroscopic studies of the thorax and especially of the mediastinum, in studying our cases, not infrequently observe pulsating areas in the aorta, which suggest to us the possibility of beginning aneurysm; or at least sacculations with pulse waves are observable in the wall of the great blood vessel at different areas. Dr. Abrams, referred to by the last speaker, called attention to this fact about a year ago, in an article (as I recall) in the *Archives of Internal Medicine*. His observations were particularly interesting to me at the time, as I had already been noting the same in a collection of fluoroscopic studies, which now number about ninety cases. As I recall the number, I think about 60 per cent. of these cases had negative Wassermanns, and in all of which there was one or more noticeable pulsating areas in the upper portion of the thoracic aorta. The most noticeable points of location seem to be at the arch on the left, at about the second interspace and on the right, between the right auricle and innominata. My plan of noting these areas has been, while making the fluoroscopic examinations, to place a thin piece of onion skin paper over the fluoroscopic screen, through which the shadow may be observed, and pencil the marginal outline of the shadow with a blue pencil, measuring the transverse diameter of the aorta at the pulsating area and the adjacent areas for future comparison.

The point on which I wish to lay particular stress in this discussion is, that in all the cases in which pulsation was observed, there was associated precordial distress, similar to that of a mild angina, and in most of these cases occasioning frequent anginoid distress. In a large number of these cases in which pulsating areas were noted at the arch of the aorta, the precordial symptoms were milder than those cases where pulsating areas were present on the right, at or about the second interspace, with or without an arch pulsating area. It has been stated by some authorities that frequently pulsating areas are observable in luetic cases in advanced aortitis; but in the cases herein referred to, the pulsating waves are present without any manifest evidence of syphilis, having negative Wassermanns. In each one of these cases there is a history of a recent attack of some form of infection (more than probable streptococcic), i. e., tonsillitis, grip, and so-called influenzas. I believe therefore, these forms of infection are capable of causing an aortitis much more frequently and much more aggravated than we are accustomed to observe. In fact, is it not true that few cases of this character are observed at all?

Dr. Mercur, closing: Dr. French points out two things which we know, first, that syphilis is as much a cause of aneurysm as of gastric crises; second, that there may be occasionally two aneurysms on the arch, and that one aneurysm may be large enough to involve two areas, thus complicating the diagnosis. In my experience this is comparatively rare. I would like to say something of those cases of aneurysm in which the patients do not have any symptoms and in which diagnosis is impossible except by the most careful and able diagnosticians. These are the cases in which aneurysm occurs within the pericardium, in which rupture takes place (hemopericardium) and the patient dies suddenly from hemorrhage. One such case was mentioned by Dr. French; the patient, a hearty, robust young man, suddenly fell dead. On necropsy an aneurysm was found which was so small that it could not have been shown by the roentgen ray. Syphilitic nodules were found on the shins and a scar on his prepuce. A more thorough examination would likely have led to helpful treatment in this case. The last time I was in Philadelphia Dr. Riesman showed me a roentgen-ray plate of an advanced aneurysm of the aorta in which there had been no symptoms at all.

Another interesting case was seen in consultation with Dr. William Gerry Morgan in Washington, D. C., and emphasizes the necessity of taking a careful history. The patient had no symptoms except nausea and vomiting and pain after eating. He had been to the best doctors in New York, Philadelphia and Baltimore. Finally he went to Washington and Dr. Morgan in taking the history elicited the facts that the man never had pain when he kept still after eating and that he always did have pain when he moved about after a meal. That point made the diagnosis, indicating that the trouble was a circulatory condition. A roentgenogram which was then made for the first time showed a large aneurysm. These are the cases which exhibit the gastric symptoms.

THE MEDIASTINUM, WITH THE CLINICAL SIGNIFICANCE OF ITS PATHOLOGIC LESIONS *

CHAUNCEY L. PALMER, M.D.
PITTSBURGH

The mediastinum, situated as it is, has a distinct clinical interest to most any branch of internal medicine. It has within its boundaries numerous structures which when influenced by pathologic lesions affect various portions of the body in numerous ways. As is well known, it is the space in the median part of the chest which lies between the approximation of the two pleura, and it is anatomically divided into two portions, the superior mediastinum, which is above the upper level of the pericardium, and the inferior mediastinum below the upper level of the pericardium. The inferior mediastinum is again divided into the middle mediastinum and is that part which contains the pericardium and its contents, the anterior mediastinum, that part in front of the pericardium, and the posterior mediastinum behind the pericardium; but on account of the encroachment of pathologic lesions from one portion on the other, the mediatinum will be considered as a whole without individual consideration of its separate subdivisions.

As a whole it extends from the sternum in front to the spine behind and contains the aorta, the innominate and thoracic portion of the left carotid and subclavian arteries, the superior vena cava and innominate veins and the left superior intercostal veins, the pneumogastric, cardiac, phrenic and left recurrent laryngeal nerves, the trachea, esophagus and thoracic duct, the remains of the thymus gland and numerous lymphatic glands which drain in some instances the upper portion of the liver and in other instances the bronchial tubes; besides all these and probably of more importance it contains the pericardium, the heart, the bifurcation of the bronchi, the pulmonary arteries and veins, the venae azygos major and minor, and the splanchnic nerves. So it can readily be seen that pathologic lesions encroaching on one, all, or

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* Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

any number of these structures can produce through their circulatory and nervous ramifications, numerous lesions which affect many structures throughout the body and set up numerous clinical conditions which are of great importance in the diagnosis of a great many chronic conditions and numerous acute conditions.

The pathologic lesions of the mediastinum may be divided into inflammatory lesions and new growths. The inflammatory lesions are adenitis, which is due to the various acute bronchial infections occurring in measles, whooping cough, tuberculosis, etc.; aortitis and phlebitis which are usually luetic; pericarditis and pleuritis with or without effusion from various causes. The adenitis of the mediastinal glands must be very common and most every individual must have had some involvement of these glands at some time, because of the great frequency of bronchial infections. It may resolve, leaving the glands somewhat enlarged or it may go on to suppuration and produce an abscess which is nearly always an associated condition with tuberculosis. Actinomycosis of the mediastinal glands has been recently reported with a cure resulting from the use of vaccine known as actinofragments. New growths include carcinoma of the glands and esophagus, sarcoma, lymphosarcoma, cysts of various types including dermoid cysts, glandular enlargements due to various leukemias, aneurysms which are as a rule due to dilatation of the artery because of a previous syphilitic mesarteritis, and the enlargements of various chambers of the heart due to hypertrophy or dilatation, and remains of the thymus gland.

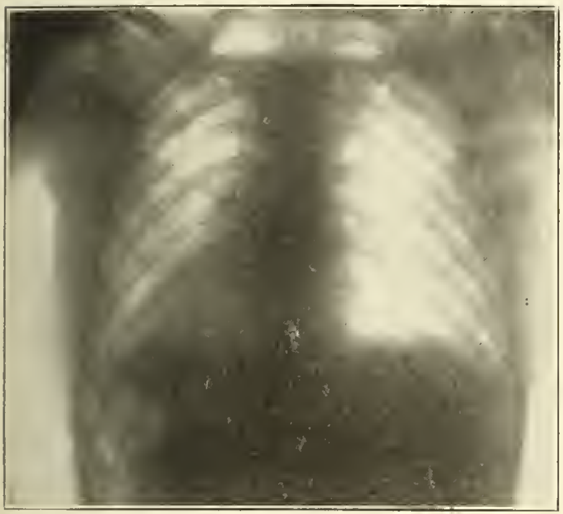

Figure 1.

In a series of sixty cases recently reported by Ross in the *Edinburgh Medical Journal* 60 per cent. of mediastinal new growths were primary, and included carcinoma, sarcoma and lymphosarcoma.

The symptoms of fairly well advanced lesions are usually those due to pressure on adjacent structures such as pain, dyspnea, cough both laryngeal due to pressure on the recurrent laryngeal nerve and bronchial due to direct pressure, dysphagia due to pressure on the esophagus, elevation in temperature of a suppurative or an acute inflammatory character, dilatation of superficial veins of neck and upper extremities if there is pressure on the large venous trunks, and various other symptoms referable to the gastrointestinal tract, circulatory apparatus, and respiratory system. Irregularity of the pupils has been reported in cases where pressure existed on the sympathetic nerves.

The physical signs are dulness on deep percussion with increased width of the mediastinum, and the tubular breathing on auscultation recently reported by Dr. Warfield of Milwaukee.

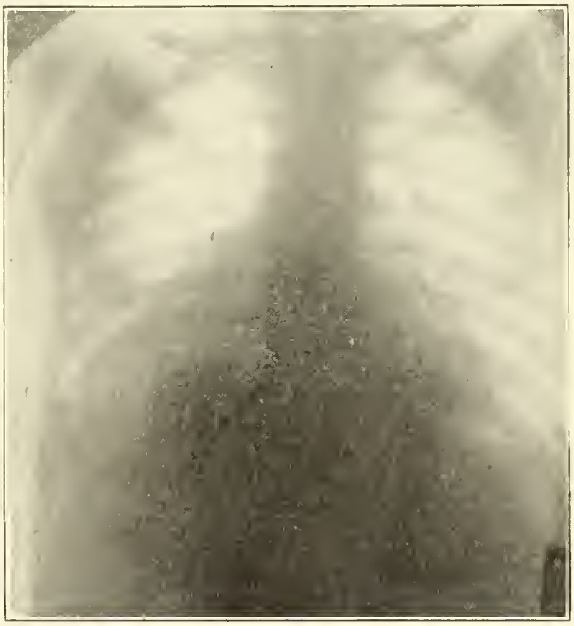

Figure 2.

The roentgenologic plates show shadows of various shapes; some are irregular in outline and are usually enlarged glands or other new growths, whereas the shadows of regular rounded outline are usually aneurysms, and fluoroscopically these regular shadows usually pulsate laterally, although great care must be exercised in the interpretation of pulsating shadows because the great vessels are so near that they may cause pulsating displacement of other growths, and the thymus gland has also been known to present a pulsating shadow, so unless the bruit, the diastolic shock, the tracheal tug, are present along with the regular pulsating shadow it is not advisable to be too sure of the diagnosis of an aneurysm.

In considering the various structures which are within the mediastinum the pneumogastric or vagus nerve is probably the most important. Its laryngeal branches supply motor fibers to the vocal cords and sensory fibers to the mucous membrane of the larynx above the vocal cords; the cardiac branches supply the heart with inhibitory fibers, the pulmonary branches with afferent branches regulating the rate and amplitude of respiration reflexly; the esophageal branches supply motor fibers to the esophagus. It also supplies motor fibers to the stomach and intestines which increase peristalsis when stimulated, and also increases the tonicity of muscular contraction of the cardia and pylorus. The pneumogastric nerve also supplies secretory fibers to the pancreas. It can readily be seen that tumors or inflammatory conditions of the mediastinum can, either by pressure or involvement by continuity on the pneumogastric nerve, produce a great variety of symptoms. If the superior laryngeal is involved cough, harsh breathing, hoarseness and other symptoms referable to the larynx are produced; if the cardiac branches are interfered with various symptoms referable to the circulatory apparatus, such as arrhythmia, etc., may be produced; if the pulmonary branches are involved slow, deep respirations will be produced. If the esophageal and gastro-intestinal branches are involved various symptoms referable to the peristalsis and proper emptying and filling of the stomach, indigestion, constipation, etc., might be produced. In this manner it is possible that a great variety of symptoms and even pathologic conditions might be produced not only by direct interference with the nerve supply, but by changes produced secondarily by alteration of the circulation, respiration and digestion, until the patient presents a great variety of conditions and may more readily acquire certain secondary infections of these various structures.

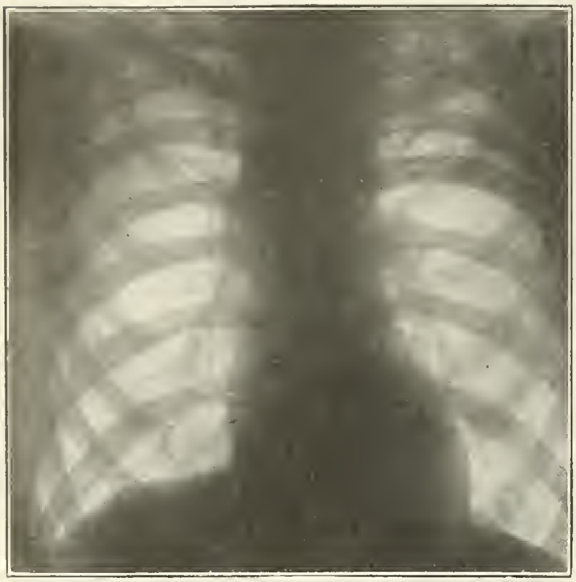

Figure 3.

If the phrenic nerve becomes involved interference with diaphragmatic movement will be produced, and if the splanchnic nerve is affected peristalsis of the intestines is likely to be inhibited with various conditions arising affecting intestinal digestion and absorption.

If the various circulatory structures, such as the superior vena cava and carotid artery, subclavian artery, innominate artery, aorta, and innominate vein, become involved, besides the effect on the heart, there arise conditions referable to the head, neck and upper extremities, such as edema of the head, face and neck, varicosity of the veins of the upper extremities, and various secondary conditions, such as dizziness and headache, or skin infections. If the circulatory structures, whose distribution involves the thoracic and abdominal organs, become involved, symptoms and lesions of these organs are produced, such as dyspnea, cough, various gastric, intestinal, and lung, liver and kidney conditions

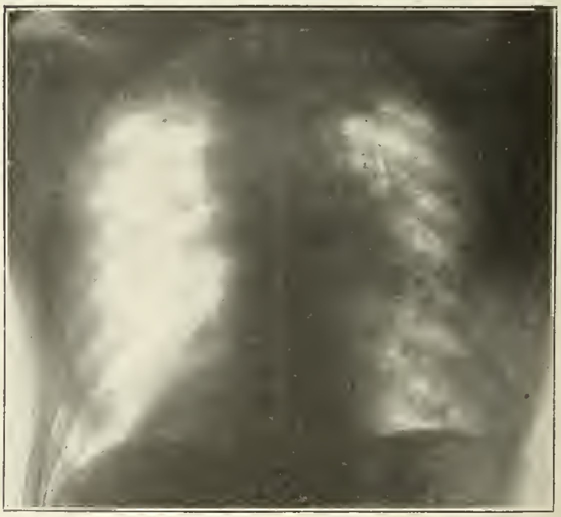

Figure 4.

might arise. It is very likely that some cases of chylous thorax and chylous ascitis might be produced by pressure on the thoracic duct.

It is not likely that in a given case only one of these structures will be affected, but frequently more than one or even all of them become involved, and this makes the interpretation of symptoms very hard. It is also likely that in the less extensive lesions of the mediastinum these structures can in time compensate for slight pressure and change in position and eventually carry on their proper functions, but it is hard to tell which lesions are interfering with the proper functions of these structures and which are not.

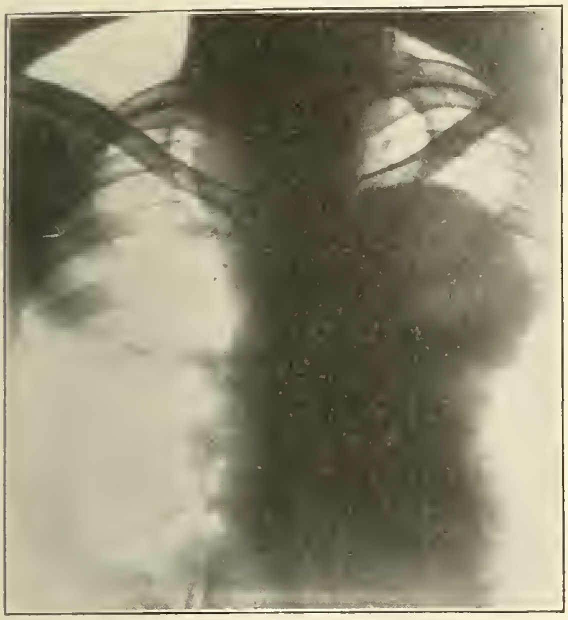

Figure 5.

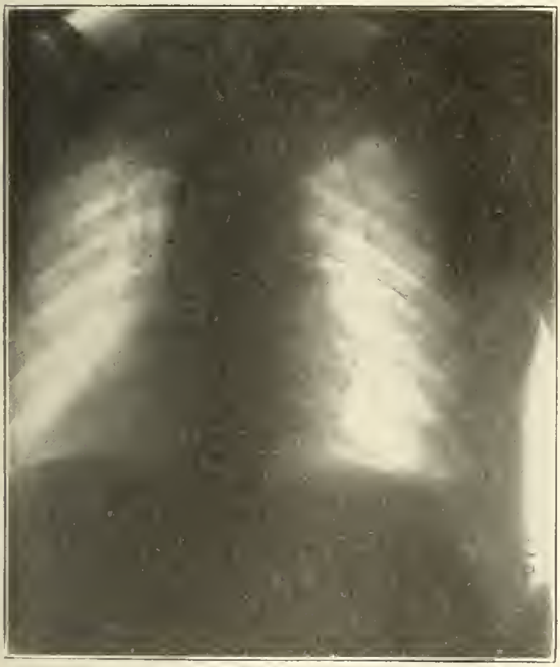

Figure 6.

The amount of involvement of the mediastinal glands, or at least their size and density, as presented on a roentgen-ray plate, has never, as yet, been decided as to what is normal and what is abnormal, and from the frequency of involvement of mediastinal structures in different ways it certainly presents a most interesting problem, and while it is not intended to blame mediastinal disease for every physical ailment, yet its structures are very important and lesions of its contents so frequent that it should at least be investigated and given some consideration in the diagnosis of a great many ailments.

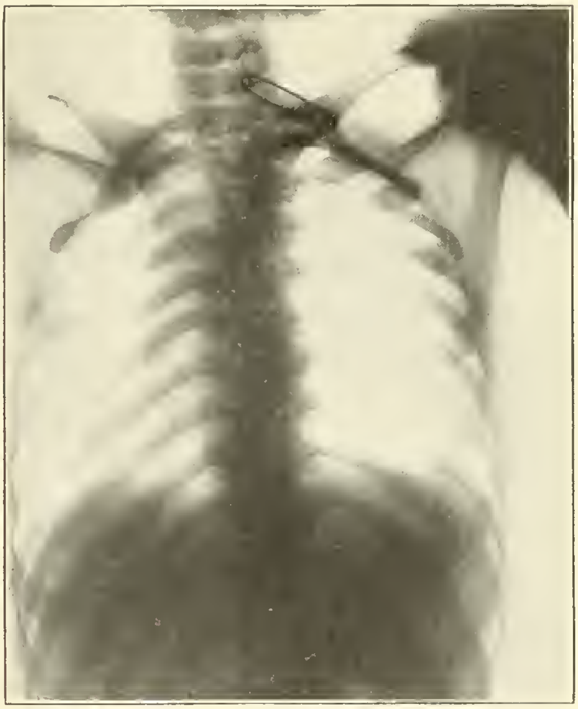

Figure 7.

Case 1.—Mr. S. had arrhythmia of rate and pressure, with a wide area of dulness over mediastinum, and slight pulse deficit. He also had various gastric symptoms, and had had an appendectomy some time previous to present observation (Fig. 1).

Case 2.—C. R. was under observation from October until the following June. This case presented cardiac hypertrophy; murmurs over all valve areas; four periods, of from four to six days each, of elevation in temperature; leukocytosis during these periods as high as 18,000; negative sputum, negative blood culture, negative Wassermann and physical evidences of disturbance in the lungs with each elevation in temperature, suggesting the possibility of the heart being an irremovable focus of infection. Diagnosis: pericarditis with effusion.

Case 3.—M. S. had edema of the face and neck with varicosity of the veins in both arms. He complained of dyspnea. Physically and by roentgen ray a mediastinal tumor was demonstrated which apparently improved on the administration of several intravenous injections of salvarsan, even in the presence of a negative Wassermann (Fig. 3).

Case 4.—J. D. complained of vertigo. His physical and laboratory findings were negative with the exception of a mediastinal tumor demonstrated by roentgen ray, which was probably causing some circulatory disturbance in the cerebrum (Fig. 4).

Case 5.—T. I. had pain over left scapula, varicosity of veins in left arm, slight bruit over aorta, marked dulness over mediastinum, but no perceptible arrhythmia (Fig. 5).

Case 6.—M. W. This case is one of generalized pulmonary tuberculosis with extensive involvement of the mediastinal glands (Fig. 6).

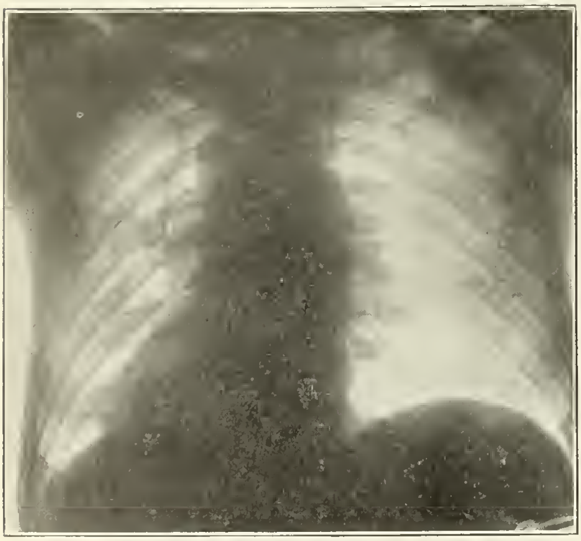

Figure 8.

Case 7.—D. J. This case presented glandular enlargement, involving supraclavicular and mediastinal glands (Fig. 7). Diagnosis, after blood count showing 50,000 white blood cells, was lymphatic leukemia. Patient died suddenly.

Case 8.—C. B. This case presented marked emaciation with regurgitation of food shortly after eating. Laboratory findings were practically negative. Physical findings showed a wide mediastinal area which was confirmed by roentgen ray (Fig. 8), showing a mediastinal tumor which was diagnosed esophageal carcinoma. Patient died and at necropsy a carcinoma involving esophagus and stomach was found.

Case 9.—L. G. had a negative Wassermann, negative urine, blood count, etc.; positive evidence of aneurysm with an arrhythmia of rate and a pulse deficit of 16.

Case 10.—Patient came to hospital in a moribund condition with extremely rapid pulse and abdominal pain and muscular rigidity. A laparotomy was performed but nothing found. After death a necropsy revealed a dissecting aneurysm of the aorta.

308 Diamond Bank Building.

DISCUSSION

Dr. W. W. G. Maclachlan, Pittsburgh: Dr. Palmer has given us an excellent survey of the mediastinum and there are many points one would like to discuss but I shall only touch on the more important. Dr. Palmer undoubtedly means to convey to us in his reference to the anatomy of the mediastinum, the multiple structures it contains and, on account of this, pathological conditions which occur here are very liable to involve several types of tissue and consequently the clinical picture presented is very often complex. As a basic principle, it is well to remember this fact.

We may broadly divide the mediastinal conditions into inflammatory and tumor formations. I agree with Dr. Palmer in laying stress on mediastinal adenitis. There is no doubt that, in all acute infections of the thorax, the lymph nodes are more or less secondarily involved. The acute lymphadenitis which one sees at the necropsy table in lobar pneumonia is very striking. Of chronic lymphadenitis there is one form to which I would like to call attention. This is the massive, caseous tuberculous process which involves so often practically all of the lymph nodes. This type of adenitis is of importance in its relation to tuberculous pericarditis. In a typical bread and butter heart of tuberculous origin it is almost certain that we find associated massive caseous lymph nodes and direct extension from these nodes undoubtedly is the usual route of infection. In general miliary tuberculosis, even where the pericardium contains some miliary tubercles and fluid, we do not have the picture of the clinical disease known as tuberculous pericarditis, blood stream infection probably explaining this condition.

We must also keep in mind enlargement of lymph nodes associated with syphilis. Pericarditis is very often unrecognized clinically. Time and again at necropsy do we find evidences of it in the presence of fibrin and increased fluid but yet it was not suspected. From a clinical and pathological experience, I believe that a fair percentage of these cases will always be unrecognized. The roentgen ray certainly will cut down our failures to a certain extent. The physical sign of increased dulness and the presence of a friction rub are probably our best guides at the present time. A word as to the pericardial friction rub. Frequently it is extremely fleeting, and on account of this, in suspected cases, an examination should be made several times during the day. We all know of experiences where the intern in the hospital has recognized a pericardial rub at night but yet on the following morning he is unable to demonstrate it to his chief. Of course, there may be a personal error here, but I am of the impression that in many cases the intern is correct.

Aortitis and aneurysm are linked to syphilis. Undoubtedly the vast majority of aneurysms of the aorta (in the mediastinum) are syphilitic in origin but I have seen one or two cases which were reported by Dr. Klotz, where an aneurysm developed secondary to an acute aortitis due to a nonhemolytic streptococcus. These cases were also associated with an acute endocarditis of the same bacteriology. Aortitis itself is not uncommonly associated with acute rheumatic fever. Dr. McCrae, in a clinic before the Jefferson Society of Pittsburgh this spring, laid stress on this fact. Further, we have the work of Klotz who was the first to point out that in necropsies from cases showing acute rheumatic fever there was definite evidence in the aorta in its outer two layers to indicate an inflammatory reaction varying from a cellular infiltration to fibrosis, depending on the chronicity of the process. I do not believe, however, that as a factor in the production of aneurysm, as we see it, we need to look much farther than syphilis. The aortitis of syphilis is also a very definite type. The two cases which Dr. Palmer reported of aneurysm with negative Wassermann are exceedingly interesting. I should not like to go back on the laboratory man but I would be inclined to think that possibly something had interfered with the Wassermann and that it might have been positive later on.

Dr. Palmer appears to be conservative in his diagnosis of aneurysm, particularly in regard to the fluoroscopic examination; with this I agree but I would like to emphasize the importance of early diagnosis of aortitis and aneurysm, particularly when both are luetic. Certainly if we wish to get better results from treatment in aneurysms we shall have to recognize them earlier or, even better, catch the syphilitic process while yet in the stage of aortitis. Somewhat wrongly we could almost refer to this as the prophylactic treatment for aneurysm. How is this to be done? If we take routine Wassermann tests in all our medical cases, a certain number of positive results undoubtedly with treatment would stop an early process in the aorta where no subjective symptoms were present. If this is not possible the slightest suggestive symptom pointing to thorax should call for a roentgen-ray examination and a blood Wassermann. For the case which presents very little subjectively until the aneurysm is of fair size, we are of course relatively helpless. One word as to its treatment. We must keep in mind that aneurysm and aortitis represent active syphilis and we must attempt to kill the spirochetes. Some very pleasing results are often seen in even moderately severe aneurysms.

Of new growths in the mediastinum, lymphosarcoma is, of the primaries, the commonest, while cancer is a more usual secondary growth. I would like to know if, in Dr. Palmer's case of cancer of the esophagus, any secondaries were found at necropsy. Cancers at this point are unusual in that we may have a very extensive primary growth with no metastases. Why cancers of the esophagus are slow to metastasize I do not know, but it does appear to be the fact. Dr. Palmer has called attention to the physiology of the nerves of the thorax and if we could keep this in mind, many of the complex symptoms would be more readily explained.

Finally, there is one point I would like to emphasize and that is the importance of the lymphatic structures. It is through the lymphatics that most of the infection, probably the great part of infection, in the mediastinum occurs. This applies to both acute and chronic conditions. According to Klotz, infections of the aorta, in all probability, are carried to it through the lymphatic stream. This is interesting when we consider how difficult it always has been to explain why syphilis picked out one portion of the aorta so regularly. The close association of the first two parts of the aorta with this massive lymph structure and the frequency of aneurysm here and the well-known lymphatic involvement which accompanies syphilis seems to be more than a coincidence. Lastly the commonest tumor that is met with in the mediastinum arises primarily in the lymph nodes.

Dr. Henry Klinzing, Pittsburgh: I have enjoyed hearing Dr. Palmer read this interesting paper and his report of a number of varied and instructive cases of this rather uncommon subject. Two of these cases I had the privilege of seeing and these pointed out to me two important facts; the one, in the case of a little girl with a mediastinal tumor and enlarged glands of the neck, the roentgen-ray picture might lead one to stop at a diagnosis perhaps of enlarged thymus (especially since she had a thymic death) or possibly sarcoma; but the blood count and not the roentgen ray makes the final diagnosis, namely, leukemia.

The second was that of the mill-worker with the ruptured aneurysm. The patient was brought into the receiving ward complaining of acute abdominal pain with marked distention of the abdomen. While he was being prepared for operation I listened to his heart and there was a loud bruit heard over the entire chest. However, on account of no history and the man's apparent acute abdominal distress it was decided to make an exploratory incision. On the way to the operating room the patient suddenly collapsed and at this time the aneurysm probably ruptured into the pericardium. Nothing abnormal was found in the abdomen.

In the first instance although the symptoms were referable to the mediastinum the case proved to be one of a blood dyscrasia, while in the other although a true mediastinal case all of the symptoms were referable to the abdomen.

As a whole the diagnosis of mediastinal conditions, and their treatment is very discouraging. Partly I think this is due to the lack of use of proper diagnostic methods, especially the roentgen ray or fluoroscope, and it should be the duty of the general practitioner who sees these cases early to avail himself of this method of diagnosis, especially when a case presents several or all of a syndrome of symptoms; namely, pain and compression behind the sternum, irritating cough, dyspnea, dysphagia, enlargement of the veins of the face or upper extremities, unequal pupils or hoarseness.

There is one other thing I would like to mention which you may have observed, that of being misled by the physical signs of a tubercular lesion in the apex of a lung, especially the right, which when fluoroscoped fails to show a lesion at that place but one does find enlarged mediastinal glands pressing on the bronchi and eliciting the stethoscope findings.

OVERSUBSCRIBED

The issue of $500,000,000 of United States Treasury certificates, the subscription to which closed March 5, was oversubscribed, the subscription in every district, except one, exceeding the quota assigned it.

The banks of the country in the past two Liberty Loan campaigns and in the purchase of Treasury certificates issued before the loans responded to the demands of the country with inspiring loyalty and liberality. The faith they show in the government finances and the patriotic response they give to the calls of the Treasury are certain indications that their cooperation and assistance will help to insure the success of the third Liberty Loan.

FOREIGN BODIES IN THE BRONCHI AND ESOPHAGUS

REPORT OF CASES *

ELLEN J. PATTERSON, M.D.
PITTSBURGH

The following cases seem to me to have points of interest individually, and collectively they certainly demonstrate the safety and success of bronchoscopy and esophagoscopy in foreign body cases. The needlessness of anesthesia is demonstrated. The great and peculiar danger of anesthesia in this particular department of surgery has been elsewhere pointed out. Other points of interest will be referred to in connection with the individual cases.

Case 1.—T. R., a boy 2 years of age, was admitted to the Presbyterian Hospital, July 29, 1913, with the history of having swallowed a button-pin (Fig. 1) the previous day. He was fretful, restless, unable to swallow anything and cried all the time. A roentgenogram showed the button in the esophagus at the level of the fifth and sixth cervical vertebrae, point up (Fig. 2). With the aid of the esophageal speculum the button was removed by liberating the point of the pin which was embedded, and withdrawing the button, forceps and the speculum together, and in such position as to prevent the point tearing the esophageal wall. No anesthetic was used and there was no reaction.

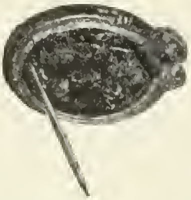

Fig. 1.—Button-pin shown in Figure 2.

Foreign bodies such as this are of great potential danger in removal if care be not taken to avoid laceration of the esophagus which is always a serious matter. Blind efforts with a bougie, probang or basket are utterly unjustifiable.

Case 2.—F. G., girl aged 9 years, was referred by Dr. A. R. Kidd of Connellsville, with a history of having inspired a brass thumb-nut (Fig. 3) from a dry cell, two days previously. There had been an unsuccessful attempt at removing the nut at another hospital. The child was slightly dyspneic on admission and was coughing, but as the nut could be seen in the trachea by the indirect method, no roentgenogram was taken. Without anesthesia and with the head end of the table dropped very low (Jackson position) so that if the foreign body should happen to be dislodged it would not drop lower into the trachea, the nut was removed through the direct laryngoscope. The dyspnea was immediately relieved and the child developing no hoarseness or other complication, was discharged, well, the following morning.

The size and shape of this foreign body rendered care necessary to avoid obstruction of the breathing during removal. The value of the position in preventing aspiration into the deeper passages in case of dislodgment is a precaution that I believe is not generally appreciated at its true value.

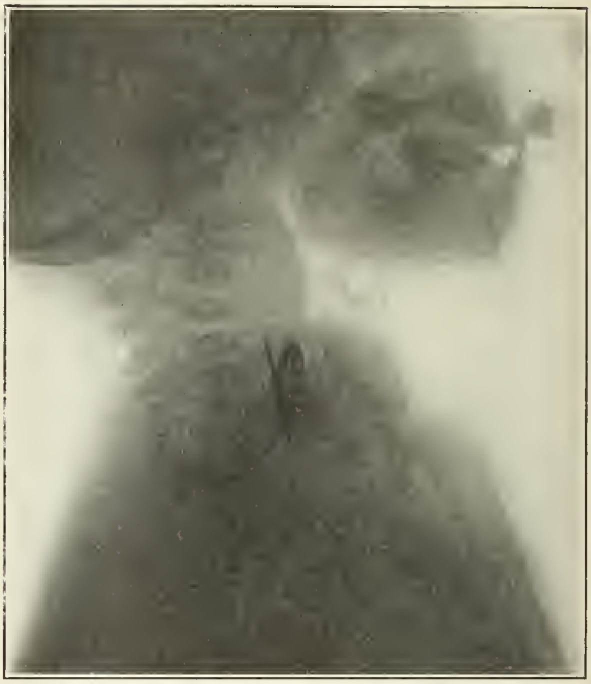

Fig. 2.—Button-pin in esophagus.

Case 3.—P. S., boy aged 3 years, was referred by Drs. McCaskey and Clark with a history of having swallowed a quarter four days previously. An unsuccessful attempt had been made to remove the coin. The child could swallow liquids only and had a slight elevation of temperature. The radiograph taken by Dr. George J. Boyd of Beaver Falls showed the coin below the cricopharyngeal fold. Without anesthesia the coin was removed with the esophageal speculum and forceps and the child discharged well the same day.

Fig. 3.—Brass nut removed from trachea. Case 2.

The safety, rapidity and success of esophagoscopy in coin cases such as this, would make one wonder at the still prevalent use of the dangerous and usually unsuccessful blind methods.

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* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 27, 1917.

Case 4.—W. M., male, 8 years of age, was referred from the Crippled Children's Home with a history of having swallowed a button-pin three hours previously. The roentgenogram by Dr. Russell H. Boggs showed the button at the level of the sixth dorsal vertebra, pin pointing up (Fig. 4). The esophagoscope was passed and the button was seen for a moment but retreated down the esophagus too quickly to be grasped by forceps. It was recovered from the stool on the third day.

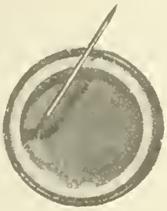
Fig. 4.—Button-pin recovered in Case 4.

The safe passage of this foreign body does not justify blind efforts to push a foreign body down into the stomach.

Case 5.—E. K., boy aged 1½ years, was referred by Dr. J. W. Beyer with the history of having choked on peanuts three days previous, coughing up fragments of the skin of peanut and being very dyspneic ever since. The child was a well-developed boy. His color was good, but obstructive dyspnea was indicated by marked indrawing in neck and at epigastrium. Physical examination by Dr. Henry T. Price showed that little or no air was entering the left lower lobe and the roentgenogram confirmed the physical signs. Without anesthesia, fragments of peanut (Fig. 5) were removed from left lower lobe bronchus through the 4 mm. bronchoscope. There was immediate relief of dyspnea and air was found at physical examination by Dr. Price to be entering all parts of the lung. Twelve hours after the bronchoscopy it was necessary to perform tracheotomy to relieve laryngeal dyspnea. The child developed a septic pneumonia and died on the fourth day.

Fig. 5.—Peanut removed from left bronchus. Case 5.

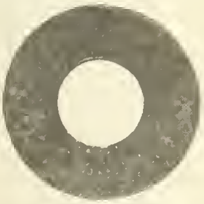
Fig. 6.—Iron washer shown in Figure 7.

The frequency of septic pneumonia, in peanut cases, renders these cases the most serious of all classes.

Case 6.—F. L., boy aged 5 years, was referred by Dr. C. M. Harris of Johnstown with a history of having choked on a metal washer (Fig. 6) six days previously. A roentgenogram by Dr. G. W. Grier showed the washer at the sternal notch (Fig. 7). The child could swallow only liquids and had not attempted to speak for days. Without anesthesia, the washer was removed and the child was discharged the following day.

As there was no laryngeal complication, it seems likely that the child did not speak because of fear of pain. Phonation was unimpaired.

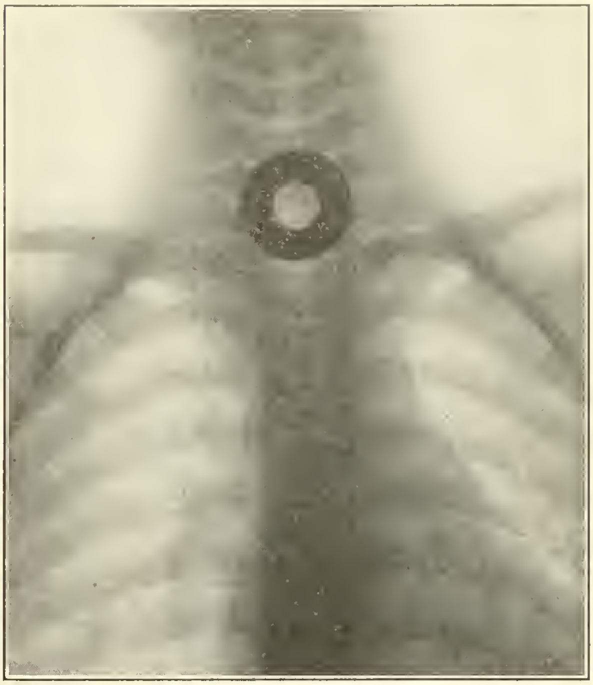
Fig. 7.—Metal washer in esophagus.

Case 7.—E. E., girl aged 2 years, referred by Dr. H. A. Hutchinson of Dixmont, with a history of having swallowed, five days previously, a button (Fig. 8) removed by her from her coat. She refused nourishment. She attempted to take a little milk at times, but usually this was vomited. The roentgenogram taken by Dr. G. C. Johnston showed the button just below the sternal notch (Fig. 9). Without anesthesia, the button was located through the esophageal speculum, wedged in the esophagus. It was removed with the esophagoscope and the child was discharged the following day.

Fig. 8.—Button shown in Figure 9.

The esophageal speculum has the advantage over the esophagoscope in that it can be used somewhat quicker and the foreign body is less likely to escape detection in a mucosal fold.

Case 8.—C. S., girl 1 year old, was admitted to the Allegheny General Hospital, referred by Dr. E. J. Sheffer, with the history of having an open safety pin (Fig. 10) in the esophagus for seven days. The child had some difficulty in swallowing milk. The radiograph by Dr. George C. Johnston showed the open safety pin, point upward and to the left, but the extremity of the point was missing (Fig. 11). Without anesthesia, and with the esophageal speculum the pin was located at the place shown by the radiograph. The point was buried to the ring of the pin in the soft tissues and granulation tissue. After liberating the point the pin was removed with Mathieu forceps. There was no reaction, and the child was discharged in forty-eight hours. There was no impairment of swallowing afterward.

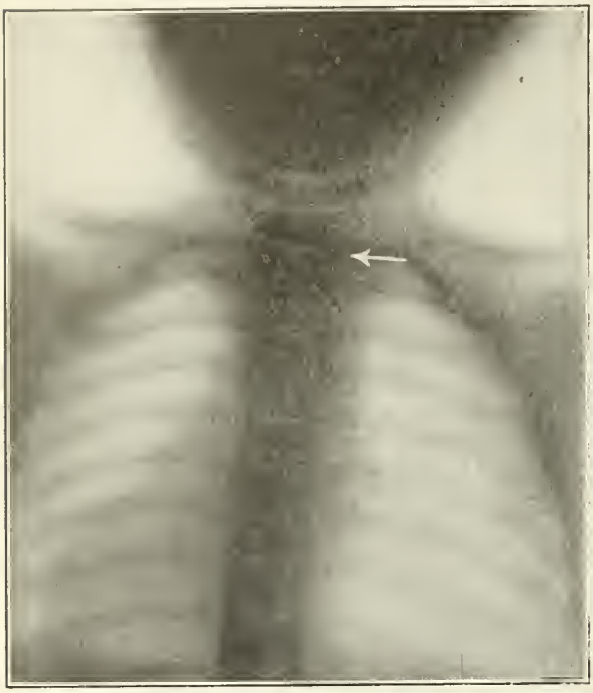

Fig. 9.—Button in esophagus.

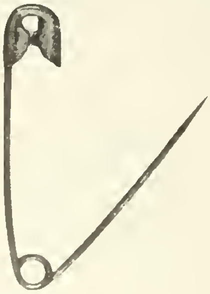

Fig. 10.—Safety-pin shown in Figure 11.

Safety-pin cases are of great potential danger and require careful handling to prevent fatal trauma being inflicted by the point.

Case 9.—W. W., male, aged 34 years, was referred by Dr. J. W. Hartigan of Morgantown, W. Va., with a history of having swallowed his artificial denture, forty-four hours before. He was admitted to the Presbyterian Hospital Jan. 30, 1917. The patient had been dozing after supper and choked on something, the nature of which he did not know. After gagging and vomiting without relief, he concluded there must be some object lodged in his throat. His wife asked him where his teeth were, and, since they could not be found anywhere, the patient decided he had swallowed his dental plate. On the advice of the doctor and failure to find the teeth in bed or anywhere else he decided to come to me. On admission the patient was weak, aphonic, face flushed, mouth dry, breath foul. There was tenderness and swelling of the neck, but no emphysema. Temperature was 101 F. He could not swallow his saliva, was suffering from water starvation and seemed rather stuporous. Physical examination by Dr. Walter B. Harvey showed coarse râles all over the chest probably transmitted. A radiograph taken by Dr. R. V. Robinson showed an artificial denture in the esophagus, with two teeth and a hook on the end, probably embedded on the left side (Fig. 12). Without anesthesia, local or general, the plate was removed in eighteen seconds by grasping the plate with Mathieu forceps through the laryngoscope and swinging it toward the left as it was withdrawn, laryngoscope, forceps and plate, all three together. The plate (Fig. 13) had been tightly impacted in the esophagus with the hook embedded in the soft tissues of the left side, causing an intense esophagitis. The patient was able to swallow water immediately after operation, though dysphagia persisted for several days. The tenderness in the neck subsided gradually and the temperature returned to normal in a week. The patient had no recollection of having been in the operating room or of having had the foreign body removed.

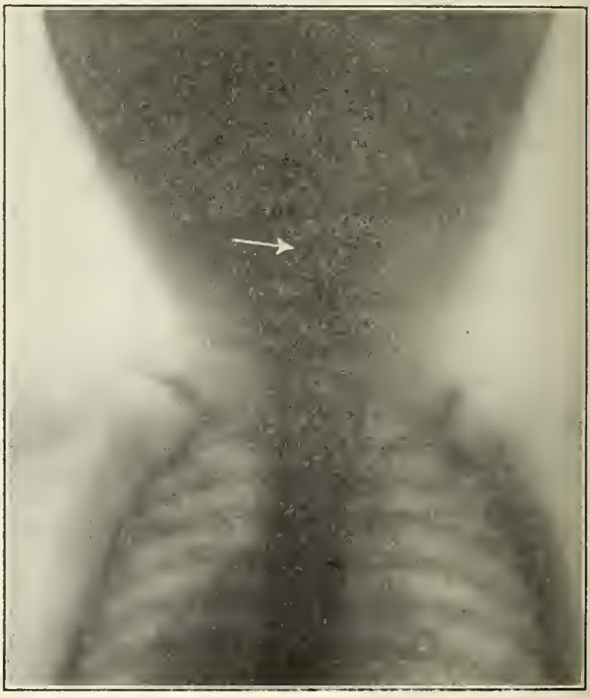

Fig. 11.—Safety-pin in esophagus.

The stuporous condition of this patient on admission and during the esophagoscopic removal of the foreign body was doubtless due to the water starvation which had reached a stage where it was endangering the life of the patient.

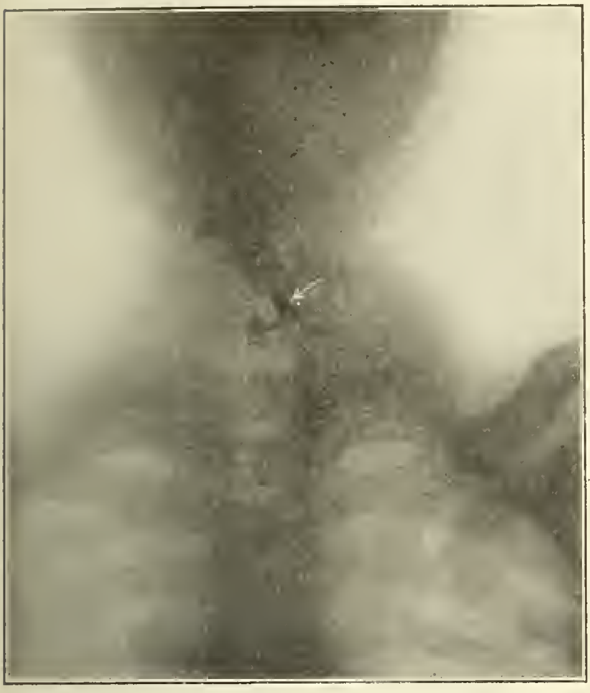

Fig. 12.—Artificial denture in esophagus.

The aspiration of the denture during dozing indicates that while it is customary to remove artificial teeth on retiring, the danger during dozing is not generally realized. The erect posture in dozing in a chair would seem to favor the accident even more than recumbency.

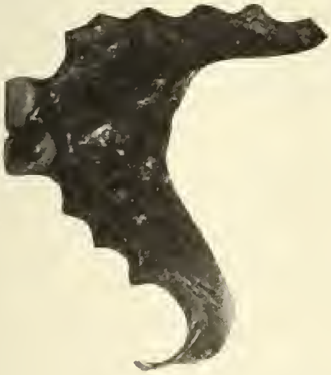

Fig. 13.—Tooth-plate shown in Figure 12.

Case 10.—M. C., a young girl, aged 16 years, referred by Dr. Wallace Bulford, was admitted to the Allegheny General Hospital, Feb. 15, 1917. While dressing four hours previously she had put two pins in her mouth, and during an attack of coughing aspirated a button-pin into the trachea. On admission she was dyspneic with wheezy respirations so characteristic of a foreign body in the trachea, color good, slight indrawing at the clavicles indicating respiratory obstruction. A roentgenogram taken immediately by Dr. R. V. Robinson showed the pin in the trachea point down (Fig. 14). While having the radiograph taken, immediately after the exposure the patient coughed violently and told Dr. Robinson that something jagged her throat. Not thinking of the foreign body being dislodged, no other plate was made. The patient was taken from the roentgen-ray room to the operating room. Without anesthesia, the bronchoscope was passed into the trachea and then into the bronchi but no sign of the pin was found. Thinking she might have coughed the pin up and swallowed it, I passed the esophagoscope but found no pin in the esophagus. Then inserting my finger in the nasopharynx, I still failed to find any foreign body. The patient suffered no discomfort whatever, not even sore throat. The next morning another ray showed the pin lodged in the nasopharynx (Fig. 15). The pin, very thin and sharp, was tight against the septum, embedded in the mucosa, and the button against the posterior end of the middle turbinal, felt not unlike part of the turbinal and it did not obstruct the breathing. Introducing the finger through the mouth and guiding the curved adenoid forceps by the finger, the button (Fig. 16) was grasped and removed through the mouth. There was no reaction and the patient was discharged the following day.

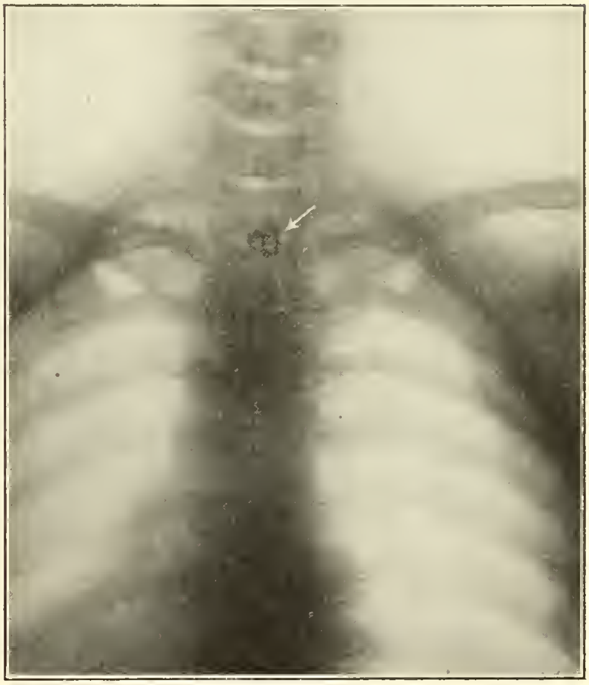

Fig. 14.—Button-pin in trachea.

Doubtless it would have been better had I paid more attention to the patient's statement that the pin had moved, and asked for another radiograph. This case emphasizes the necessity of having an additional radiograph taken at the last possible moment preceding the endoscopy.

Case 11.—A. B., girl aged 12 years, referred by Dr. W. A. La Ross of McDonald, was admitted to the Presbyterian Hospital, March 16, 1917, with the history of having had a cockle bur in the larynx for twenty-four hours. It had been aspirated while walking with burs in the mouth. On admission the child was aphonic and quite dyspneic. Without anesthesia, in Jackson position, the bur was removed with Mathieu forceps through the laryngoscope in 23¼ seconds. The bur was wedged between the cords, propping them open and the prickles were adhering to the cords. Because of the friability of the bur it was desirable to remove it *en masse* without losing any of the prickles to be aspirated into the trachea. The larynx was intensely inflamed for forty-eight hours after the removal of the bur but the patient was discharged well on the third day.

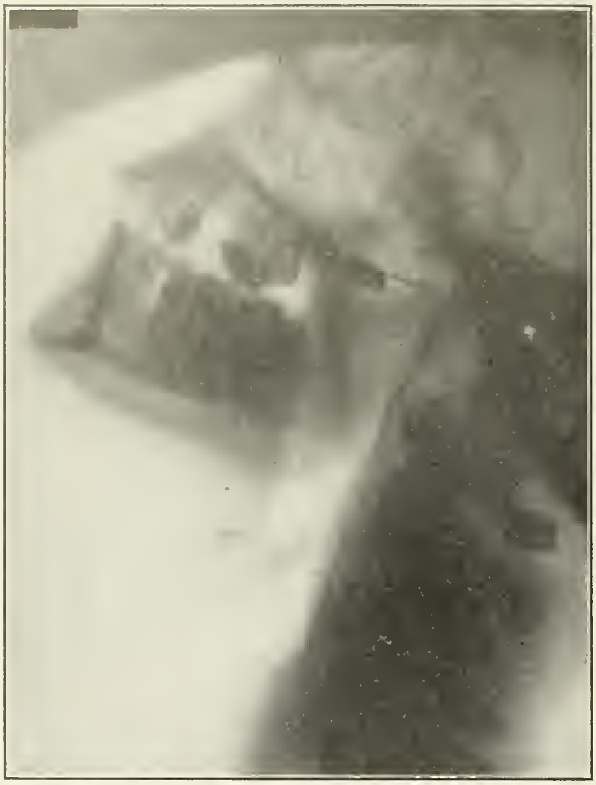

Fig. 15.—Button-pin shown in Figure 14 dislodged from trachea during paroxysm of coughing lodged in nasopharynx.

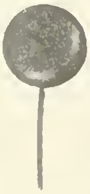

Fig. 16.—Button-pin shown in Figures 14 and 15.

The local reaction, while considerable, was nothing like what one would expect from looking at the extremely sharp thorny spicules with which the bur (Fig. 17) is studded.

Case 12.—Mrs. W., aged 41 years, referred by Dr. G. G. Ash of Bradford, was admitted to the Presbyterian Hospital, March 24, 1917. Twenty-four hours previously, while eating dinner, the patient felt something sharp in the throat which caused choking and vomiting without relief. On admission she was unable to swallow her saliva and had intense pain and tenderness on the right side of the neck, but no emphysema. A radiograph by Dr. G. C. Johnston showed a spicule of bone behind the larynx (Fig. 18). Without anesthesia, local or general, the bone, ¾ inch in length (Fig. 19), was removed through the esophagoscope. It was difficult to find the bone as it was buried in edematous mucosa, and the foreign body had produced such an intense esophagitis and laryngitis. The patient had dysphagia for forty-eight hours but the temperature was normal and she returned to her home on the third day.

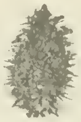

Fig. 17.—Bur removed from larynx. Case 11.

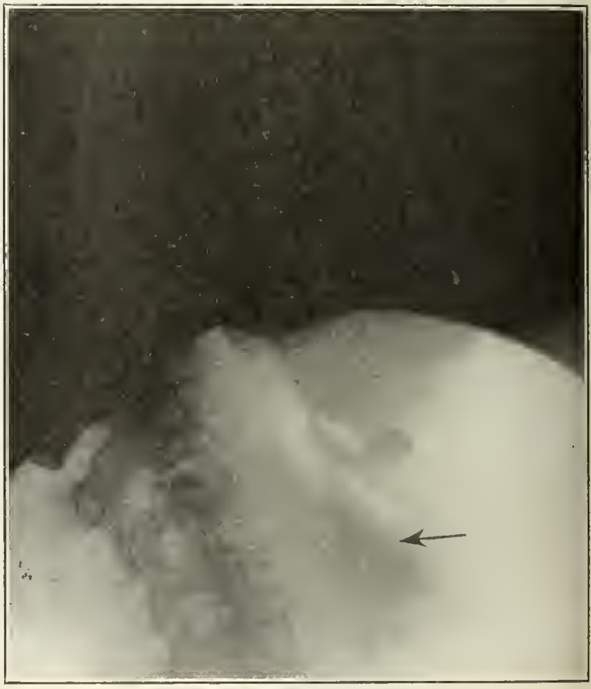

Fig. 18.—Fragment of bone in esophagus.

Fig. 19.—Bone shown in Figure 18.

The radiographer is usually rather reluctant to take a radiograph of a foreign body of so little density as a bone, but my experience has been that the excellent radiographic work done for us today very often shows a bone very distinctly as in this case. Of course, if negative, esophagoscopy should be done anyway if the subjective symptoms warrant.

Case 13.—J. G., boy 2 years old, referred by Dr. John Walters of Sewickley, was admitted to the Presbyterian Hospital, June 2, 1917. On April 27, 1917 (six weeks previously), the child had been eating peanuts when his brother tried to take some of them from the baby who cried, choked and became cyanotic. From that day the child was ill, restless, feverish, coughing, moaning in his sleep, and dyspneic at times. The doctor, who first saw the case, treated the child for "cold" and gastro-intestinal trouble until the parents became dissatisfied and consulted Dr. Walters, who referred the case to me. On admission the child was restless, hoarse, dyspneic, coughing, temperature 99.4 F. Physical examination was made by Dr. C. W. Morton. On percussion there was revealed a well-defined area of dulness over left bronchus at about the junction of the third rib and costal cartilage; other findings negative. On auscultation breath sounds were hoarse, many moist râles both on inspiration and expiration. Air entered all parts of lung. The radiograph taken by Dr. G. C. Johnston showed a transparent foreign body at opening of left upper lobe of bronchus (Fig. 20). Without anesthesia, I passed the 4 mm. bronchoscope into the left bronchus and after removing a large amount of secretion found several fragments of peanut, and a marked tracheobronchitis. Physical examination after operation by Dr. Morton showed some râles over lower left lobe, apex clear, and dyspnea was less marked. The dyspnea and hoarseness decreased steadily. The temperature fluctuated between 99.6 and 101 until the seventh day when it reached, and thereafter remained, normal. The child was discharged well on the tenth day.

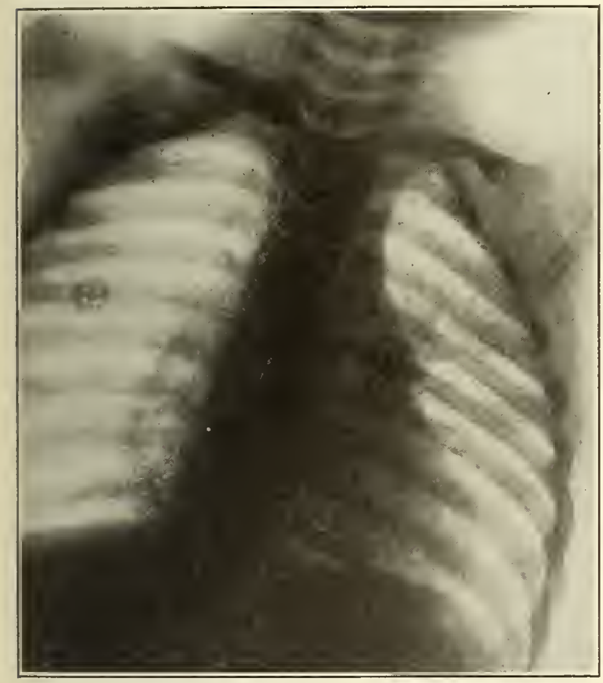

Fig. 20.—Fragments of peanut in left bronchus.

This case shows that small fragments of peanuts (Fig. 21) are at times held in the swollen mucosa and that they are not coughed up. The successful outcome here was very gratifying, as, if unrelieved, such cases are usually quickly fatal.

Case 14.—B. R., boy aged 15 months, referred by Dr. J. W. Hartigan of Morgantown, W. Va., was admitted to the Presbyterian Hospital, July 11, 1917. Six days previously the mother had the child in the garden when he took a cob of seed corn from a basket and bit off a mouthful. The mother made him spit the corn out but he choked and became very dyspneic and later passed one grain by bowel. The parents stated they had taken the baby to nine doctors, seven of whom gave the child "physics." Two others looked at the child and said nothing could be done, he would have to die. In desperation the grandmother consulted Dr. Hartigan without taking the baby with her and he referred them to me. They left home at midnight, arriving in Pittsburgh at 7 a. m., and the only way they could keep the baby breathing was to keep it in the upright position and shake it every little while. When I asked the grandmother if she was not afraid the baby would die on the train, she replied: "Yes, but it was better than seeing it die at home without trying to do anything." On admission the child was extremely dyspneic and cyanotic. There was marked indrawing at epigastrium and suprasternal notch. The eyes were full of pus. The mouth was dry and the tongue, roof of mouth and buccal mucosa were covered with sordes. Dr. R. V. Robinson took a radiograph immediately after the child was admitted but as the child stopped breathing the moment he was placed in the dorsal position, he was rushed to the operating room where I did tracheotomy, the breathing having ceased by the time the child reached the operating table. The trachea was full of thick tenacious pus almost like glue. After removing the pus and stimulating the patient with oxygen, respiration was restored. I then passed the 4 mm. bronchoscope through the tracheotomy wound and found a large grain of corn in the trachea (Fig. 22). After removal of the corn, air entered both lungs very freely and the child fell into the first peaceful sleep he had had for seven days. Physical examination showed the child had a septic pneumonia. This, however, subsided, the temperature dropping gradually from 104.8 to normal on the eighth day. Respirations fell from 70 to 36. He was decannulated the twenty-eighth day after operation and discharged well on the thirty-third day.

Fig. 21.—Peanut removed from left bronchus. Case 13.

Fig. 22.—Corn removed from trachea. Case 14.

The tracheotomy was done because of the respiratory arrest, not for the passage of the bronchoscope. That nine physicians consulted in succession should be unaware of the achievements of bronchoscopy in foreign body cases is one of the chief reasons for writing this paper. Undoubtedly hundreds of children die from the aspiration of foreign bodies. In some cases the accident not being witnessed the possibility of foreign body may not be suspected; but undoubtedly in other cases the parents' suspicions are ignored or the fact of the possibility of relief by the bronchoscope in experienced hands is ignored. It is not to be expected that every physician should be trained to do the bronchoscopy himself, and he is not to be criticized for not having in his office a bronchoscopic outfit, but he should at least know that large hospitals in medical centers are equipped to save the lives of these children.

Case 15.—E. C., girl aged 18 months, was admitted to the Allegheny General Hospital, June 11, 1917. Three days previously she was eating salted peanuts and choked, becoming dyspneic. The day following the accident two bronchoscopies had been done at another hospital under general anesthesia, each lasting one-half hour, but both had been unsuccessful. The child became very dyspneic and was then referred to the Allegheny General Hospital. On admission the child was slightly dyspneic and quite hoarse. The color was good, the temperature was 101; pulse 130; respirations 48. Physical examination by Dr. Elterich showed on inspection the excursion of both sides of chest equal; percussion dulness increased on right side at base of lung; the vesicular murmur was very much exaggerated on the left side; vesicular murmur on right side posteriorly was very much diminished. Dr. Elterich stated that the foreign body was probably in the right bronchus. The radiograph taken by Dr. R. V. Robinson showed a nonopaque foreign body occluding the right lower lobe bronchus. Without anesthesia, I passed a 4 mm. bronchoscope and removed a large piece of peanut from the right bronchus (Fig. 23). The dyspnea was relieved immediately. Air entered both lungs freely, temperature dropped to normal on the fourth day and the baby was discharged well.

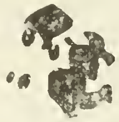

Fig. 23.—Peanut removed from right bronchus.

The accurate diagnostic work of Dr. Elterich in this case is worthy of note. In the very numerous cases of foreign bodies not opaque to the ray the physical signs are our sole reliance. Too often the physical signs are considered indicative of the lesions present, but the foreign-body origin is unsuspected.

Case 16.—A. B., girl aged 2½ years, referred by Dr. E. P. Smith of Barracksville, W. Va., was admitted to the Allegheny General Hospital, June 13, 1917. An interpreter for the father, who could not speak English, said the baby had had three black beans in her mouth thirty-six hours previously and had spat two out. The child choked on the other one, and during the day had had four severe attacks of dyspnea and cyanosis. On admission the child was restless, extremely dyspneic; temperature 102.8; pulse 200; respirations 70. The color was a peculiar dusky shade; the eyes were turning from side to side. A typical picture of air hunger. Physical examination showed that air was entering the left lung, but that no air was entering the middle and lower lobes of the right lung. The child was in such a desperate condition that there was no time to take a radiograph. Tracheotomy failed to relieve dyspnea. The mucosa of the trachea was found to be so swollen that I could not pass a 4 mm. bronchoscope. The child died an hour and a half after admission.

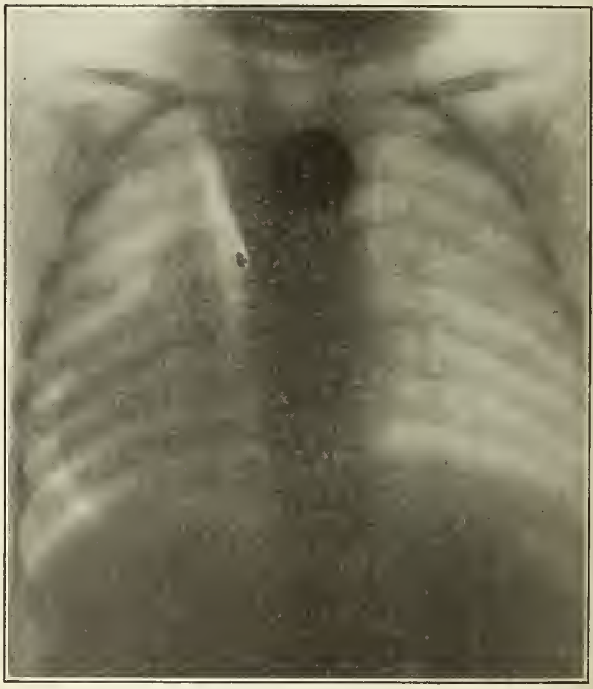

Fig. 24.—Penny in esophagus.

The extremely firm swelling of the trachea has been noted in a few foreign body cases. In instances in which there was an opportunity for investigation all the bronchi were found to be similarly swollen, the smaller ones being occluded. Such cases are exceedingly rare, and it is fortunate that they are, because they seem to be unrelievable by bronchoscopy.

Case 17.—B. M., girl 28 months of age, referred by Dr. W. L. Croll, was admitted to the Presbyterian Hospital with a history of having a penny in the esophagus for two weeks. The mother had consulted several doctors who gave the child laxatives but as the child continued to regurgitate all food, she consulted Dr. Croll who sent the baby to the hospital for a roentgen-ray examination. The ray showed the penny at the level of the sternal notch (Fig. 24).

The esophagoscope was passed and the coin was found below the cricopharyngeal fold covered with food and exudate. The esophageal mucosa showed an unusual degree of inflammation. The coin was removed in twenty-four seconds time from the starting of the esophagoscopic introduction.

The use of laxatives for a foreign body in the esophagus is, of course, useless. If in the stomach it is useless, and if in the intestines laxatives are contraindicated. The first step should always be to have a radiograph taken as was done by Dr. Croll in this case.

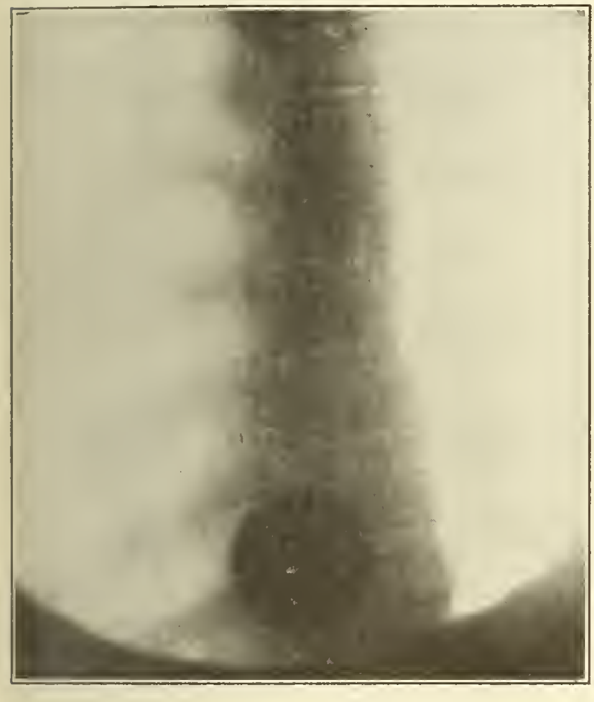

Fig. 25.—Half dollar in esophagus at hiatus.

Case 18.—Mrs. C. W., colored, aged probably 85 years, was admitted to the Western Pennsylvania Hospital, July 1, 1917, with a history of having swallowed a half dollar, seven days previously. The patient said she had two half dollars bequeathed her by her husband. One coin she kept in her shoe and the other one she put in her cheek for "safe keeping." She fell asleep and woke suddenly with a dream and swallowed the coin. On admission she was emaciated, the mouth was dry, the tongue was coated, the breath very foul. She was unable to swallow anything and complained of pain 2 inches to the left of the ensiform cartilage. The radiograph taken by Dr. John McCullough showed the coin in the lower third of the esophagus (Fig. 25). Without anesthesia, I introduced the esophagoscope and located the coin at the hiatus. The flat surface of the coin was presenting so that it was necessary to turn it on edge before grasping it for removal. The coin had evidently lodged first at the cricopharyngeal level because the woman had an ulcerative esophagitis at that point. Whether or not it had been pushed down by blind efforts could not be learned.

Lodgment at the hiatus is unusual, unless the foreign body has been pushed down. Usually if the constriction at the level of the sternal notch is passed, the intruder goes spontaneously into the stomach. The probable extreme age of the patient is unique for a coin case.

Case 19.—L. K., boy, aged 2 years, referred by Dr. Bowes of Canonsburg, was admitted to the Presbyterian Hospital, July 15, 1917, with a history of having swallowed a safety-pin the previous day. The radiograph taken by Dr. R. V. Robinson showed an open safety-pin at the level of the sternal notch, point down (Fig. 26). Without anesthesia, with the esophageal speculum and Mathieu forceps, I removed the pin (Fig. 27) in seventy seconds. There was no reaction and the child was discharged in forty-eight hours.

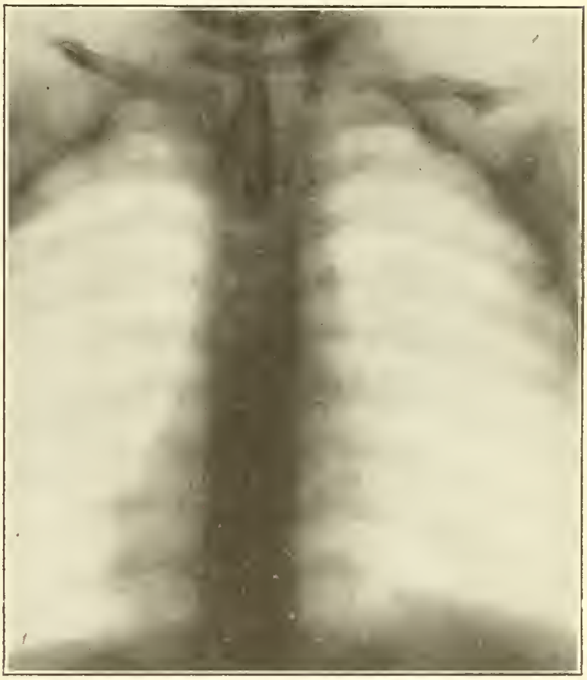

Fig. 26.—Safety-pin in esophagus.

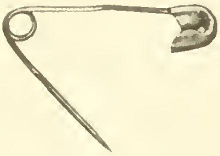

Fig. 27.—Safety-pin shown in Figure 26.

The enormous mortality that has followed hasty and ruthless extraction of foreign bodies in similar cases, makes it worthy of note in this case that careful disengagement and removal are without danger.

Case 20.—W. A., boy, 4 years old, referred by Dr. G. L. Beswick of Wilmerding, was admitted to the Presbyterian Hospital, July 21, 1917, at 11 p. m., with a history of having inspired a watermelon seed five hours previously. On admission the child was taken directly to the operating room as he was hoarse, very dyspneic and was becoming slightly cyanotic. Without anesthesia, I introduced the 5 mm. bronchoscope and found the seed (Fig. 28) in the left bronchus. There was a marked tracheitis and laryngitis. The duration of the operation was fifteen minutes and nine seconds. The child was admitted at 11 p. m., and at 11:30 p. m., the child was in bed sleeping quietly with its foreign body removed. Air entered both lungs freely after removal of the seed and the child was discharged well after a few days observation.

Fig. 28.—Water melon seed removed from left bronchus. Case 20.

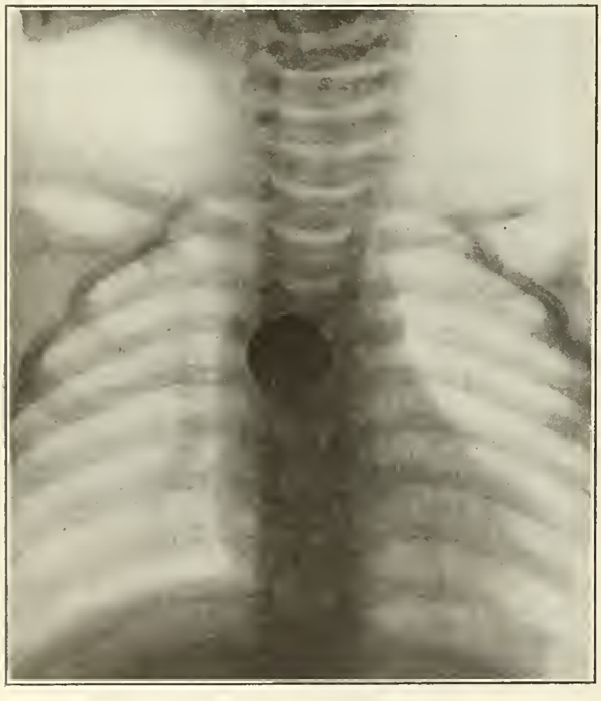
Fig. 29.—Penny in esophagus.

The local reaction set up in five hours in this case is rather uncommon, and was probably due to the knocking about of the foreign body in the trachea.

Case 21.—L. H., boy, 2½ years old, referred by Dr. H. E. Patrick of Youngstown, was admitted to the Presbyterian Hospital, Aug. 17, 1917, with a history of having swallowed a penny five days previously. Two days after swallowing the coin the child had no trouble, then began to choke and regurgitate food. The roentgen ray taken by Dr. Heberding of Youngstown, showed the penny at the level of the fourth and fifth ribs (Fig. 29). Without anesthesia, I passed the esophagoscope and removed the penny with the rotation forceps in three minutes. There was no reaction, the temperature was normal and the child was discharged the following morning.

The rapidity and safety with which coins can be removed by sight was again demonstrated in this case, and shows once more the folly of the dangerous and often unsuccessful attempts at removal or forcing downward.

Case 22.—O. M., 42 years of age, was referred to Dr. Jackson by Dr. Cole of Indianapolis, Aug. 20, 1915. In Dr. Jackson's absence I had charge of the case. The patient had been making an application to the nose with a straight wire applicator at 8 a. m. The handle broke and the wire slipped through the nasopharynx and into the esophagus. A radiograph, taken at 10 a. m., showed the wire in the throat and one taken at 3 p. m., showed the wire in the stomach. The patient arrived at our office at 9 a. m. the following morning and a ray taken by Dr. G. W. Grier at 10 a. m., showed the wire in the ileum. The following day, Saturday, at 10 a. m., the wire was in the transverse colon. Sunday afternoon at 3 the patient had a severe attack of pain so I put him to bed fearing perforation. A ray taken showed the wire still in the transverse colon. Dr. Nelson Clark saw the patient in consultation and after getting the report from the ray he advised a low enema. The next morning at 9:30 the ray showed the wire in the rectum and it passed at 11 a. m.

The interesting point about the case is the length of the wire, 3⅞ inches. That a foreign body of this length could make all the turns in the intestines is worthy of note. Undoubtedly the passage was facilitated by the plan of treatment followed, namely, the use of bulky food and the avoidance of cathartics. The safe passage after a foreign body has reached the stomach does not sanction often fatal and usually unsuccessful blind efforts to push down a foreign body that has lodged in the esophagus.

Westinghouse Building.

DISCUSSION

Dr. Chevalier Jackson, Philadelphia: There is nothing in surgery, it seems to me, by which a patient can be so quickly brought back from the brink of the grave as by bronchoscopy and esophagoscopy. I think we might say there is nothing in surgery by which a patient can be as quickly pushed into the grave as by hasty ill-advised efforts at removal. When you have searched for a foreign body for a long time and you finally see it, it takes almost superhuman courage not to seize it and pull on it; yet that is perhaps the most dangerous thing that can be done. It seems to me that this is well illustrated particularly by the two pin-button cases, in each instance a button with a rigidly fixed pin projecting outward. Dr. Patterson removed one of them, and in the next case, in manipulating it to get the pin into position in which it would do no harm during removal, the button began to recede from her. Now it must have taken superhuman courage not to grab that button with the forceps and pull on it under such circumstances; yet if she had done so, she would probably have killed the patient. But she let it go down, realing that it was a great deal safer for that patient to let it go down, having the point up toward her than to grasp the button and pull. She was endeavoring to turn it, and had it not started downward she could have pulled it out safely after turning; but realizing that it would have made the difference between life and death, she did not do so.

The feeble, aged colored woman would undoubtedly have been killed by an external esophagotomy, which seems to be in the minds of some of the men today the only way of getting out a foreign body located in the cervical esophagus.

The artificial-denture case was just bristling with fatal possibilities. To begin with, there was water starvation of two days' duration. Another day or two would probably have been fatal without any surgical procedure. The man was already stuporous from being deprived of water. If the denture had been pushed down with a bougie blindly, there was a chance of killing the patient by perforation with probably failure to push the foreign body down. Dr. Patterson very modestly said that she swung it to the left. That sounds simple, and it is not difficult to do when the necessity of doing it is realized; but that swinging to the left before pulling on the denture makes all the difference between killing the patient and removing the foreign body without doing the patient any harm. Swinging to the left unhooked it. If she had pulled on it shaped as it is, it would be just like pulling out the fish hook when the fish has swallowed the hook. You remember in your boyhood days, possibly, turning the fish inside out by pulling, just like a glove finger.

Dr. Patterson mentioned time in regard to all of the cases in which she had a record. Time is very important. It is not a matter of seeing how soon you can get a foreign body out. The point is this: Prolonged bronchoscopies in children are dangerous; short ones are harmless if carefully done. That is why Dr. Patterson and I have always made it a rule to keep the time on the operation.

In regard to the case of septic pneumonia, I think the septic pneumonia probably was cured by the tracheotomy. The patient might not have recovered without tracheotomy. Tracheotomy was done for dyspnea, but the patient was drowning in pus and secretions, and good drainage through the tracheotomic wound probably saved the patient's life.

I think Dr. Patterson is to be congratulated on the masterful manner in which she handled these cases, and also on the masterful inactivity in cases in which she did nothing.

Dr. Fielding O. Lewis, Philadelphia: I feel that Dr. Patterson's paper has been very instructive. It has been to me, since I have had the pleasure of working with Dr. Jackson for the past few months, and I think those of us who have seen foreign body work done appreciate the problems which she has solved and the extreme dexterity with which she has handled the cases. I think that a great many important lessons have been brought out in Dr. Patterson's paper, and I have felt somewhat chagrined that the foreign body cases that I attempted before it was my pleasure to assist Dr. Jackson, and the failures that I had which I think were due to improper use of improper instruments, and not being properly instructed in the anatomy and mechanics of foreign body work.

I think anesthesia is also a very important proposition in Dr. Jackson's method. So many doctors have said to me, "I do not see how Dr. Jackson can do these things without some form of anesthesia." If you would see these little fellows that have stricture of the esophagus, children 2 or 3 years of age, come into the operating room smiling, get onto the table and open their mouths to have this tube introduced, you could readily understand that these little fellows apparently have no pain at all.

Another important lesson which I have learned is the great importance of proper roentgen-ray studies in all of these cases. I have seen Dr. Jackson study roentgenograms sometimes for days before he would make up his mind just what to do. And so many cases have been brought in with perhaps a slight history of being a possible foreign body, when proper roentgen-ray examination has cleared up the case entirely. It has certainly been very instructive to me to hear Dr. Patterson's paper and I think we all have been greatly benefited.

Dr. C. C. Eves, Philadelphia: I do not know that I have ever listened to a paper with greater interest and gotten more out of it than I have from Dr. Patterson's paper this morning. It seems to me she touched on every point, every vital point in the foreign body work. All of us who have done some of that work know that these cases are extremely difficult and that the technic means almost everything in removing foreign bodies. As Dr. Lewis has said, it seems very easy to see Dr. Jackson and Dr. Patterson take these foreign bodies out, and it is very difficult for those of us who have tried it to do it with the same ease that they do. I want especially to emphasize the fact of the physical examination. I am very glad Dr. Patterson has had so thorough a physical examination made of these cases. Very few have had that done, I think, previously, and I do believe if we have a thorough physical examination made and the result of this physical examination tabulated properly, we will eventually have physical signs of great value in locating foreign bodies. Such foreign bodies as small pieces of peanut are very hard to locate, and often can be located by the physical examination. I think that the assistance one has is a very important part of the work. It may mean the difference between failure and success. I have had to do some of this work with entirely untrained assistants, and the cases with which I have had most difficulty have been where I have had very poor assistance.

I want also to emphasize the fact that a roentgenogram should be taken just before the patient goes on the table, where there is any chance of the body being moved. Of course, there is a chance in every case. Last week I had a case of a patient with a pin in his throat. The first plate made showed the point of the pin projecting directly forward. Before the patient went to the operating room, I telephoned to have another roentgenogram made, which showed that the pin was projecting directly across. In this case it made quite a difference, as it does in all cases, whether we see the foreign body in the actual position it is in before we start taking it out.

Dr. Jackson: I should like to say a word by way of emphasis on Dr. Lewis' point about adequate equipment, especially as I committed the sin in the early days of encouraging men who wished to get just a few instruments. This is a great mistake. Endoscopy for foreign bodies is peculiarly the kind of work in which you must have the equipment and you must have it at hand. You can send out in the ordinary operation and have a few more instruments sterilized and wait for them; but in this work you cannot. Ofter it means life or death to have them ready. There must be adequate equipment to do justice not only to the patient, but to the operator.

Dr. Eves' remark about the physical examination, it seems to me, deserves the utmost emphasis. We all have been a little careless about having a physical examination made in cases of foreign body opaque to the ray. We know it is there, and we do not have made, as we should, a careful physical examination, forgetting that in other cases in which the foreign body is not opaque to the ray, we have very little on which to go unless we work up the statistics of cases in which the roentgenologist's report is positive. In our clinic this oversign has been corrected in the last few years, and we now have valuable statistics on this phase of the subject.

UTEROSCOPY *

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PHILADELPHIA

The diagnostic methods employed to determine the nature of the pathologic lesion in cases of obscure intrauterine disease may be divided into two classes: (1) Those which are commonly resorted to, but which do not expose the uterine cavity to visual examination and consequently fail in some very important cases to afford complete and much desired information; (2) those which permit of visual exploration of the cavity of the uterus with all the advantages attendant upon the examination of the lesion in its natural environment.

To the first class belong bimanual palpation, sounding the uterus, digital exploration of the uterine cavity, dilation and curettage and examination of the scrapings. The second class embraces transperitoneal hysterotomy and uteroscopy. A brief review of the various methods will serve to indicate the superiority of uteroscopy over all of the others.

Bimanual, or vagino-abdominal palpation, applied under the most favorable circumstances, discloses only abnormalities in size, contour, position and mobility of the uterus or other pelvic viscera. Even after such examination, the nature of any disease existing within the uterus can only be surmised from our knowledge of pelvic pathology and previous experience in such cases. The use of the uterine probe in exploring the cavity of the uterus adds very little to the information obtained through careful bimanual procedure. By sounding the uterine cavity, its depth and possibly any gross irregularity in its shape, also the presence of large tumors extending into it, may be determined, but the ordinary diseases of the endometrium or malignant degeneration thereof, would still evade detection. Furthermore, unless carried out under careful asepsis and gentle manipulation, there is added the danger of infection and perforation of the uterus. Digital exploration of the uterine cavity is a procedure which is attended by many difficulties and disappointments. It is rarely resorted to and even when used does not often afford satisfactory information. Few of us are provided with an index finger so small that it may be easily introduced through a fully dilated cervical canal, except that of a recently pregnant uterus, without causing so much constriction at the base of the finger as to diminish tactile sensibility. Fewer of us have pursued this method of examination with sufficient zeal to enable us to differentiate with certainty the serious from the benign lesions of the endometrium. Curettage of the uterus and microscopic study of the scrapings, while yielding more precise information than any of the others, is frequently disappointing and leaves us in a state of uncertainty, either because of failure to remove the diseased tissue or through accidental loss of the important portion of the scrapings or because of a pathological report which is indefinite and unsatisfactory.

The collection of scrapings from the uterus by most of the methods in vogue is a more or less uncertain procedure. If a nonflushing spoon curet be used it may fail to remove from the uterine cavity particles of mucous membrane or neoplasmic tissue which have been detached from the wall of the uterus. If a flushing curet be employed it is difficult to prevent some or, at times, all of the detached tissue from escaping into the bucket with the douche fluid. From the standpoint of diagnosis it is important that no portion of the scrapings should be lost, consequently only that method which insures the collection of every particle may be accounted a complete success.

The employment of the speculum and sieve here illustrated (Fig. 1) insures that success.

The distinctive features of the apparatus are: (1) A sieve, the bottom of which forms a cup which is detachable; (2) a speculum with an obtuse angle which directs the fluid (conveying

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* Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

the scrapings) with certainty from the uterus to the sieve. When the scrapings have been collected in the sieve they may be easily washed free from the blood clot and, after detaching the cup, they may be readily examined and transferred to another container.

The desire for greater precision in determining the causes and directing the treatment of obscure intrauterine disease has led some gynecologists and surgeons to resort to transperitoneal hysterectomy.

While it was advocated by Montgomery many years ago and practiced occasionally by him and others, it is only of comparatively recent date that the operation has achieved any popularity.

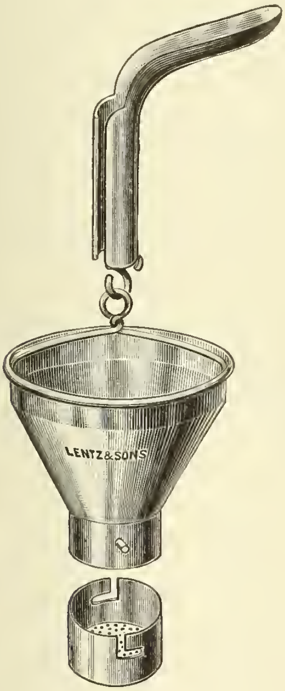

Fig. 1.

There can be no question about the complete exposure of the cavity of the uterus (although not of the undilated cervical canal) by means of this operation, nor of the opportunity thereby afforded directly to treat any existing intrauterine disease, but those who follow the teaching of one of our most distinguished surgeons in advocating transperitoneal hysterotomy for the purpose of establishing "a prompt and certain diagnosis when a reasonable suspicion exists of malignant disease of the uterus" (Deaver), and who extend its performance to "clearing up the exact condition (within the uterus) in many cases now beyond our diagnostic powers" are likely to ignore another method of diagnosis which is equally precise and resort too frequently to an operation which is not without risk.

In spite of the absence of any fatality in the patients subjected to hysterotomy, some of them must have suffered complications and sequelæ such as massive pelvic adhesions as reported by Hirst, which could have been avoided by other methods of diagnosis and treatment. Every invasion of the peritoneal cavity is attended by the risks of infection, inflammation and adhesions, and there is no surgical skill so great, or aseptic technic so perfect as to totally eliminate them. We agree with the advocates of hysterotomy that the methods previously employed in the diagnosis of intrauterine disease afforded at times inexact and inadequate information. The doubt, in which we are left, as to the true nature of the existing disease and the fear of its possible malignancy lead to unnecessary removal of the uterus with occasional fatal result. We agree also "that the best way to attack a pathological condition and unfold a puzzling symptom-complex is to expose the afflicted parts to the eye of the surgeon." This may be accomplished, in uterine disease, by means of the uteroscope. Precision in diagnosis and the avoidance of the risks incurred by unnecessary hysterectomy were the incentives which lead to its invention.

Four years ago when the author was experimenting with uteroscopic examinations and when he introduced his uteroscope to the profession, he was not familiar with the previous work done in this field. He took for granted that since there was no well-known instrument on the market for making visual examinations of the uterine cavity, whatever instruments may have been devised and employed could not have given entire satisfaction. This surmise was substantiated by a review of the literature on the subject and consideration of the various instruments previously introduced. For more than fifty years there have been attempts, more or less successful, at determining the condition of the interior of the uterus in vivo by visual exploration.

As early as 1864 Aubinais (de Nantes) attempted to determine the position of the fetus in utero by a novel but entirely unsuccessful method. He placed a piece of heavy black paper over the abdomen of the woman. Through an opening in the center of the paper, corresponding to the position of the umbilicus he projected a strong light, and through a speculum in the vagina attempted to get a shadow of the fetal bones.

The first account of a successful intrauterine visual examination through a dilated cervix is that of Pantaleoni in 1869. He employed a tube of Cruise in connection with the endoscope which Desormeaux had introduced in 1865 for examination of the urethra and bladder. His first case was one of metrorrhagia in a woman 60 years of age. He dilated the cervix with a sponge tent and through the endoscope found a polypoid vegetation to be the cause of the bleeding. He subsequently reported three similar cases diagnosed in the same way. In 1872 Amussat described several instruments for illuminating body cavities which he thought might be useful in uterine diagnosis. He employed them, however, only for illuminating the vagina and the portio vaginalis of the cervix after the introduction of a vaginal speculum. An instrument devised by Trouve which he called a polyscope was used in a similar manner. The various instruments which have been devised from time to time for intrauterine visual examination have been classified by David as follows: (*a*) Intrauterine specula, (*b*) hysteroscopic tubes with external lighting, (*c*) hysteroscopic tubes with internal lighting.

The intrauterine specula were either tubular or bivalve. Jobert (de Lamballe) advocated the use of a tubular speculum, 1 cm. in diameter through the dilated cervical canal. The bivalve intrauterine specula were those of Mathieu, Brissez (Lille) and Vulliet (de Geneve). The last claimed to be able to get a photograph of the uterine mucosa through his speculum. The chief cause of failure in the use of these specula, however, was the inability to secure a sufficient degree of illumination of the cavity of the uterus. In 1865 Desormeaux gave to the world his endoscope which consisted of a tube, lamp and a reflector. It was the first instrument which gave satisfactory results for illuminating body cavities and was used by him in examination of the urethra and bladder. As before noted this was the apparatus employed by Pantaleoni in his successful examination of the uterine cavity. LeBlond likewise employed the Desormeaux endoscope, but failed because of bleeding which was increased by his use of the instrument and caused obstruction of the tube.

In 1895 Bumm reported success in determining polypi, chronic endometric changes and carcinoma of fundus. His inability to control the bleeding sufficiently to get uniformly good results caused him to be reserved in his praise and advocacy of uterine endoscopy. He warned against traumatic infection caused by the instrumentation and reported a case of salpingitis following the examination.

In 1893 Blondel (in the service of Doleris) attempted several experiments without satisfactory results. Pechevin and Boisseau du Rocher (in service of Le Dentu) had a similar experience. The only record of an attempt to endoscope the uterus by an American is that of Morris in 1894. The most extensive and at the same time the most satisfactory experience with a hysteroscope having external lighting was that of Clado. He began experiments in 1896 and in collaboration with Dulay in 1898 he wrote a treatise on hysteroscopy, setting forth the complete results of his researches. In his "Manual of Gynecological Diagnosis," he devotes a considerable space to endoscopy of the uterus. A review of his early work with hysteroscopy is reported in a thesis of Proutiere. Clado employed chiefly a tube of small caliber after slow dilatation of the cervix with laminaria tents. He controlled troublesome bleeding by tamponade of the uterus with a solution of antipyrin and cocain, or by irrigation of the uterine cavity with a hot saline solution. While these hemostatic measures successfully controlled the bleeding in most cases, he reported failures in obtaining a clear view of the uterine cavity in some because of obstruction of the endoscopic tube with clots.

Hysteroscopes with Internal Light.—In 1905 Judet with the urethroscope of Luys experimented on the uterus in the cadaver. He made no observations in the living, but confided his method to David, who began experiments in 1907 with the same kind of urethroscope. David tried it first in the cadaver with good results, but met with complete failure in the living. He commented upon his failures in the following words: "Indeed, that which we were not able to determine on the cadaver, is that the uteri which we are asked to examine are always those which are bleeding more or less abundantly, and it turns out that the hysteroscopic tube is hardly introduced before it is blinded by the blood which fills it." He abandoned the open end tube for this reason, and tried closed tubes, first test tubes, which were introduced into the dilated uterus and illuminated with a small electric lamp on a stem. He then had made a closed metallic tube with glass at the end and illuminated in a similar manner. This instrument was presented before the Obstetric Society of Paris, and a description of it published in *Bulletin de la Societe d'Obstetrique de Paris,* December, 1907.

David dilates the cervix either rapidly with

Hegar's bougies or slowly with laminaria tent, but prefers the latter, because it produces less bleeding, and may be done without an anesthetic. He controls active hemorrhage by methods similar to those described by Clado. Complete control of the hemorrhage is just as essential for the successful operation of the hysteroscope of David as in all others previously described. If the closed glass end which is introduced into the uterus becomes coated with blood the illumination of the cavity is diminished and the view obscured. The obstacle presented by the bleeding I found to be the most difficult to overcome in my experiments with various types of endoscopes. Not until I devised an irrigating attachment which forms a part of the uteroscope which I described three years ago were my experiments completely successful. With this attachment I find that I can use with equal success endoscopic tubes having either internal or external lighting. The tubes which I employ are open at both ends, and are readily cleansed of blood by the irrigating fluid (Fig. 2).

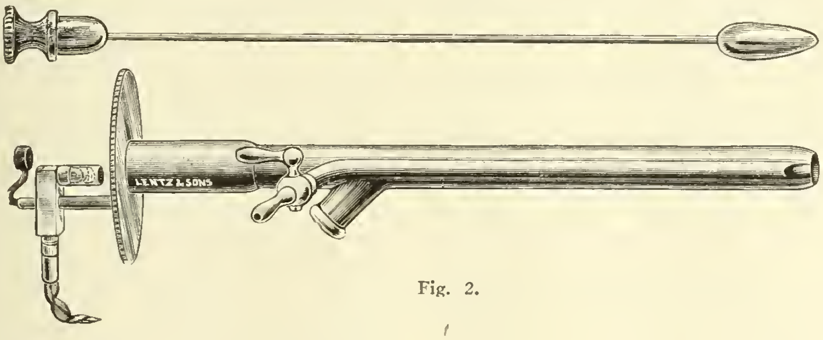

Fig. 2.

Technic.—The examinations with the uteroscope which I have made thus far have been under general anesthesia, usually nitrous oxid.

In the use of the uteroscope, as in other intrauterine manipulations, asepsis of the vagina is essential and should be obtained by approved methods. The uteroscope is sterilized as follows: The metal tube and obturator are boiled for at least five minutes; the lamp holder and lens and rubber-covered electric cord are immersed in 70 per cent. alcohol for at least ten minutes. All parts can thus be handled without danger of infection.

Anesthesia having been obtained, a self-retaining univalve speculum is introduced into the vagina to retract the perineum; the anterior lip of the cervix is grasped with two double tenacula, and the cervical canal dilated with graduated bougies. The dilation should be done very carefully in order to limit the hemorrhage resulting from laceration of the tissues around the internal os. After thorough dilation (to 46 French) the uteroscope is introduced until the point of the obturator meets the resisting wall of the fundus, when the obturator is withdrawn. The desired degree of illumination having been previously obtained, the cord is attached to the lamp holder and this in turn to the endoscope.

It is well to flush the uterine cavity with saline solution at 120 F. by means of the irrigating attachment and to swab it gently through the tube before making the observations.

The chief difficulties encountered in the use of the uteroscope are hemorrhage and acute flexions of the uterus. The latter is usually overcome by dilating the uterus with graduated bougies, if proper precautions are observed to prevent puncture of the uterine wall. Thorough dilation having been procured, the introduction of the uteroscope is attended with little or no difficulty.

Profuse and uncontrolable hemorrhage prevents satisfactory examination with the uteroscope. The difficulty produced by a smaller amount of bleeding may be surmounted by flushing the uterine cavity with saline solution at 120 F., and swabbing with cotton or gauze through the endoscopic tube by aid of long forceps. If this is not successful, the uterine cavity should be tightly packed for a few minutes with gauze, either plain or saturated with 1-4,000 solution of adrenalin chlorid. This, however, will rarely be necessary if the irrigating fluid has been of the temperature recommended.

If a clot happens to obstruct the tube it may be easily removed with a cotton swab held in a long straight forceps.

Indications.—Uteroscopy is not proposed as a method to supplant those generally employed to determine pathologic conditions within the uterus, but rather as an adjunct to assist in the rapidity and precision with which such conditions may be recognized. The inspection of a lesion in its natural environs assists in determining its location, its extent, its relation to the surrounding structures and the condition of the contiguous area.

Uteroscopy finds its greatest field of usefulness in discovering the causes of pathologic uterine hemorrhage. It would seem to be a distinct step forward to be able to determine by prompt and simple means whether the cause of such hemorrhage is serious or insignificant. Thus we may be properly guided in the application of measures of treatment, avoiding the employment of drastic and dangerous methods when simple and safe ones would suffice.

Findings.—Through use of the uteroscope I am able to present the following data concerning some uterine lesion whose chief symptom is irregular hemorrhage. The normal mucosa of the body of the uterus is light red in color and of a velvety appearance. It bleeds easily, when subjected to slight trauma. After complete dilation of the cervix (to 46 French) the interntl os contracts again quickly, and, on gradually withdrawing the uteroscope, can be distinctly observed as a narrow gateway between the cavities of the corpus uteri and the cervix.

The color of the mucous membrane of the cervix varies from yellowish to pinkish, according to the degree of congestion in the small blood vessels, which latter can be sometimes be distinguished. The arbor vitæ arrangement of the mucous membrane in cervices which are not badly lacerated is readily observed. The pathological conditions of the endometrium present the following features:

1. *Hyperplasia of the Endometrium.* — So-called chronic hyperplastic endometritis may be characterized by three types of endometrial changes. In one, the endometrium appears thickened, pale, smooth and edematous. A second presents a mucosa which is shaggy. The shagginess is made up of small villous projections which appear more distinct if viewed while waving when the irrigating fiuid runs into the uterine cavity. In the third type the lining of the uterus is studded with numerous polypoid projections of varying sizes. They are pinkish, may bleed readily from traumatism, but are not easily detached by the end of the uteroscope.

2. *Isolated mucous polypi* have about the same color as the normal mucosa and may present small dark hemorrhagic areas (though this is rare). They engage in the opening of the uteroscope and may be seen to move in the irrigating stream. Their point of attachment is readily determined so that their complete removal with a curet or special forceps is assured without necessarily disturbing other areas of the mucosa.

3. *Carcinoma of the corpus uteri* of the diffused type presents itself as many irregular, pale, yellowish and pink polypoid masses which fill the cavity of the uterus. The features which seem to distinguish it from multiple benign polypi are the greater friability of the former and more profuse bleeding when pieces of it are broken off with the end of the uteroscope. Circumscribed incipient carcinoma appears either as a pale, irregular, polypoid mass which is friable and bleeds easily, or as an irregular ulcer with a greyish floor and a thickened, friable edge. At a later stage of the ulceration small blood clots may be seen adherent to grayish, sloughing degenerated areas.

4. *Chorionepithelioma* of which I have examined one case, is the only condition in the wall of the uterus which is distinguished as a circumscribed, bright red tumor.

5. *Incomplete Abortion.* — Retained products of conception produce a very characteristic condition. They consist of irregular masses of varying size closely adherent to the uterine wall, usually near the fundus. The distinctive feature of the mass is its mottled surface, on which yellowish areas are irregularly interwoven with dark red or bluish-red areas, where the blood clot had adhered. No other condition which I have observed within the uterus produces such an appearance.

Contra-indications. — Uteroscopy, like other intrauterine manipulations, has within itself the possibility of injury if unwisely employed. It seems almost unnecessary to caution against its use when pregnancy is known to exist or is even suspected. It is contraindicated in acute infections and inflammations of the genital tract and peri-uterine structures. Its application during the existence of chronic pelvic inflammatory disease should be limited to those cases in which operative treatment of the diseased parts is to be immediately undertaken; for it must not be forgotten that traumatism of the uterine tissues is likely to result in a relighting of a latent pelvic inflammation. While not contraindicated in those cases of pelvic disease in which the changes in the uterus itself are of less importance compared with concomitant disease of other pelvic viscera, the information which it affords is of doubtful utility from the standpoint of either diagnosis or treatment.

The claims made for uteroscopy may be epitomized as follows: (1) It fills a well recognized want for a method of greater precision in the diagnosis of intra-uterine disease. (2) It affords more accurate information concerning intra-uterine lesions in vivo than any other diagnostic method except transperitoneal hysterotomy, and at the same time eliminates the dangers attendant upon invasion of the peritoneal cavity. (3) By demonstrating that a large proportion of cases of obscure intra-uterine disease are nonmalignant and may be efficiently treated by the curet or placental forceps it reduces the resort to unnecessary and destructive operations. (4) Uteroscopy, like similar diagnostic procedures, has its limitations and definite contraindications. Its employment should be restricted to those cases in which it can elicit valuable information without endangering the health or life of the patient.

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TREATMENT OF PULMONARY EDEMA IN PNEUMONIA

In the treatment of pulmonary edema in pneumonia, the most reliable procedures are: strophanthin intravenously, caffein subcutaneously, oxygen inhalation, venesection, and perhaps counterirritation to the chest. Supplementary treatment should be determined by the presence of acidosis or other associated conditions.—W. A. Bastedo, M.D., *Jour. A. M. A.*

SELECTIONS

STEPS TO VICTORY[*]

For every American enlisted to take an active part in the present war, fifty Americans remain at home. How can these fifty, month in and month out during the war, help the nation take the steps necessary to victory?

The question of the supreme duty of the citizen not called to military service is one that every true American has asked himself many times. "I want to show my devotion; I want to express my patriotism in some tangible form," is a statement we all have made.

In seeking out hard tasks to perform, some of our citizens have, indeed, found an expression of their patriotism in duties that are proving of inestimable service to the nation. The tremendous progress in our war-advancing activities is evidence of that.

All of us have not found the opportunity to undertake hard tasks, however, and in looking toward them from a distance we have felt constrained to ignore the small tasks at hand, because they were, seemingly, so insignificant. Yet after all, it is in the performance of the relatively small and simple tasks that the majority of us will have to be content in carrying out our part of the war.

It is a broad statement, yet a true one, that America's first great victory will be won when the personal advantage and the personal privilege of each of us have been submerged in unselfish devotion to the common cause. This first great victory will be won, then, when we have determined for ourselves the degree in which we shall recognize two fundamental duties that rest on us, duties of regulating in our individual lives the *things to do* and the *things to do without* during the progress of the war.

Thousands of men and women, if age and sex permitted them to go to the front, would serve as well as any who have already gone. Love of country would on the battlefield find in them its highest expression. But because they remain at home, and because they do not wear the badge of service, their own part in the greatest contest ever fought by the nations of the earth has not been brought directly home to them.

It is not a very heroic part to play, determining for oneself the things to do and the things to do without in war-time. Heroic or otherwise, the determination must nevertheless be made. So it rests on us at home to make the determination. This war will not be won by the naked bravery of those who carry our colors to France; he is lacking in imagination, and in knowledge of economic facts as well, who fails directly to associate the elements of business and financial life with the vital elements of the war.

Modern warfare requires an infinitely larger number of things than did tribal warfare, but because its wants are supplied by industries wonderfully organized, individuals sometimes think their part not worth reckoning. Their part is most decidedly worth reckoning. There are three ways in which it is to be applied:

By Rigid Economy.—The war is going to call more and more for thrift and for an elimination of waste that will enable us to give our men at the front the support they need.

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[*] From a booklet prepared by The Mechanics and Metals National Bank, 20 Nassau St., N. Y., copy of which will be sent on request.

By Careful Saving.—Saving will be called on more and more to supply the capital with which the government can carry on the war.

By Hard Work.—The war is going to be fought more and more with the output of the industrial establishments of the country.

Never before were economy, saving and work so necessary. As time goes on they will increasingly be recognized as the basis for winning the war. Our soldiers and sailors alone cannot accomplish the purpose for which they have enlisted. Our soldiers and sailors, properly backed by the people at home, will be an invincible force for victory and peace.

The nation can afford no negative economy. What it can afford is a curtailment of all unnecessary spending, and a wise and wasteless use of our resources. Sacrifice that means self-punishment would be ruinous in the long run; business depression and starved minds and bodies would not go far in contributing to win the war. The kind of thrift that makes for serious depression in business is wrong. Our supreme duty lies in keeping our affairs, our bodies and our minds vigorous and wholesome. If we are to have a long drain of war, and are to be triumphant, our country requires of us commercial and financial strength, and moral and physical strength as well.

The war is not a side issue. It is the biggest and most serious thing America has ever faced, and in the crisis we must keep that thought constantly before us. The cost of the war to the United States is calculated at more than a billion dollars a month. This means that in turning our energies to the manufacture of war indispensables, a billion dollars worth of labor and materials must be diverted regularly, every month, away from the gratification of our personal needs and desires. A billion dollars equals 30 per cent. of the American people's monthly income.

Can we effectively divert so large a percentage of our income to war purpose without application of every possible ounce of effort and self-denial? Hardly.

The experience of other nations must become the example of the United States, none the less because we have no other source from whence to draw our economic strength than from ourselves. Every particle of food, every bit of clothing, every rifle, gun, cartridge and shell used by our men abroad must be supplied from the United States. Our's is a stern obligation, the surmounting of which requires the support of every American citizen.

SAYS AMERICA IS IN GRIM AND SERIOUS DANGER UNLESS ALL CITIZENS DO THEIR SHARE IN THE WAR

The following article by Dr. Ray Lyman Wilbur, president of Stanford University, is issued by the Committee on Public Information:

It is surprising how few of our Americans have grasped the significance of the fact that in Australia, a country that has contributed materially to this war, there is, as the result of at least two harvests, piled up a very large quantity of cheap and practically government-owned wheat, much of it in the open air, where it cannot be adequately protected from various kinds of damage. Yet we have had an unprecedented call on our wheat supply in this country and in Canada resulting in a great increase in prices, due to the fact that the European nations absolutely required wheat for the sustenance of their people. The answer to this apparent anomaly is that it takes three times as long for a ship to go to Australia for food as it does to go to Canada or the United States, and the world has not the shipping available for the long hauls because of the submarine menace and the exigencies of war.

Oil and other food stocks are also piled on the Asiatic and African coasts awaiting shipment, while we are using food fats in our soap because we cannot get at these stores.

The most pressing problem before the United States and the nations engaged with it in the war against the Hohenzollern dynasty is to supply food and ships and thus defeat the German submarine attack on the left flank of the western front.

MUST BE DONE BY AMERICANS

The western front simply must be maintained and must eventually be pushed forward by Americans, or there will be no final conclusion to the great catastrophe.

Many of our people do not seem to realize that we have entered into the great struggle of autocracy versus democracy, and that President Wilson has said that we cannot conclude a peace with any but a constituted representative of the German people. That means that we must defeat, and absolutely defeat, the most powerful war lord in all history, who has at his command the most wonderful war machine that has ever been devised. We cannot defeat him with a pounding of drums or waving of flags or with any form of national hysteria. We can only do it by concerted action in food saving, shipbuilding, munitions making, and soldier training. The sooner we settle down to this terrible task the sooner it will be over. Every day that we delay in our grasp of our responsibilities means the loss of so many hundred or so many thousand of our own boys, who will have to go to the trenches for that much longer period of time. If we can resolutely and successfully meet this problem in the next twelve months it is probable that we can by that time see what its conclusion is likely to be.

At the present time no man can say what will be the outcome. Germany now occupies the position of a victor. We dare not let her remain so. Every ounce of energy that we can put into the fight we must use, whether it be in the production of food, in the suppression of German propaganda, in the building of airships, in sustaining our embargo, or in carrying on our productive forms of industrial and agricultural life in the best way possible. Until we begin as a people to individually take a personal interest in every phase of this war, and until the most interesting thing to every American when he rises in the morning is what happened on the western front the day before, we are not only in danger, but in grim and serious danger, that autocratic forms of government will replace those in which we now take such pride and satisfaction.—The Official Bulletin, Jan. 31, 1918.

The report on children's play in Washington describes the various sections of the city and the extent of the playgrounds and athletic fields provided by the District government, by the public schools, and in connection with the Federal parks. It includes an analysis of distances and population in relation to play facilities and makes recommendations for the further development of recreation in Washington.

THE PENNSYLVANIA MEDICAL JOURNAL

Published Monthly **Official Organ of the Medical Society of the State of Pennsylvania**

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The Medical Society of the State of Pennsylvania does not assume responsibility for any statements or opinions published in this Journal.

ATHENS, PA., APRIL, 1918

PRESIDENT DONALDSON'S APPEAL

With full appreciation of the loss to scientific medicine at large, to our commonwealth specifically, and to the Medical Society of the State of Pennsylvania as sustained in the death of Dr. Samuel G. Dixon, I accept in deepest humility the duties bestowed by the Medical Society of the State of Pennsylvania on its first vice president.

As individual members of the Medical Society of the State of Pennsylvania the most important subject for our consideration during these war times is maintenance of our organization at or above par. Upon whom does that duty devolve? Surely not upon the magnificent percentage of our membership who have so unselfishly responded to our country's call. No, it is the duty, and should be the modest pleasure of us stay-at-homes, to provide the energy, the funds and the devotion so necessary at this time.

We stay-at-homes have of course at present extraordinary demands on our physical and mental energies, on our financial resources, and on our heart strings, but who among us would dare compare these extra duties with the sacrifices made by our members now in service. Who would compare extra work amid familiar home surroundings with that of our M. O. R. C. members among the discomforts and discipline of camp, cantonment or base hospital, or extra financial calls with their complete surrender of long-established medical and surgical practices? Or who among us considers his or her little war problems comparable to those of men and women who, leaving home and family ties behind, are serving the sick and wounded amidst ever-present danger "over there?"

Now, fellow stay-at-homes, let us with high hopes and wider vision carry on this work. Officers and committeemen of component county societies, give the old society your best efforts; members, attend appointed meetings always and promptly, take active part in scientific and business meetings, and, above all, promptly pay your annual dues. Cry as we may about increased expenses, few of us in Pennsylvania can truthfully say that increased income has not been forthcoming to meet new financial demands. Cannot you realize that, having remitted the dues of our members in active military service, it behooves you and me to pay promptly our own dues and to assist graciously in overcoming the deficiency. Let it not then be said in truth that any among us has failed in his individual responsibility and plain duty to his absent medical neighbor, and it will of necessity follow that membership in the Medical Society of the State of Pennsylvania will convey to soldier and stay-at-homes alike a sense of security.

Your heartiest cooperation during the remaining months of the administration inaugurated by the late Dr. Samuel G. Dixon is ardently desired.

Walter F. Donaldson.

WHERE DOES THE SOCIETY'S MONEY GO?

The question is sometimes asked, Why does the society not do this or that? The answer: Lack of funds. Then naturally follows: Where does all the money go? The answer:

Jan. 1, 1918.

John Doe, M.D.

To the Medical Society of the State of Pennsylvania, Dr.

To annual per capita assessment (fixed annually by the Board of Trustees)	$2.75	
(1) By Medical Benevolence Fund.......		$0.10
(2) By Medical Defense Fund..........		.75
(3) By editing, publishing and mailing Journal		1.00
(4) By all other expenses................		.90
		$2.75

WHAT YOU NOW GET

1. From this $2.75 there is taken, as provided by the By-Laws, 10 cents for the Medical Benevolence Fund "to be used only for the relief of pecuniary distress of sick and aged members and of the parents, widows, widowers or children of deceased members." When this fund was started eleven years ago it was decided that all the money derived from the members should be invested until the fund should amount to $10,000, the interest only being allowed for distribution by the committee. The committee, whose work is strictly confidential, has been enabled to assist numerous members, the most allowed any one member during any single year being $125. The fund now amounts to $10,000. Surely no member will begrudge this 10 cents.

2. There is also, as provided by the By-Laws, taken out of the $2.75 the sum of 75 cents for the Medical Defense Fund which is "to be used only for the legal expenses of members threatened with, or prosecuted for, alleged malpractice." This fund has accumulated until it now amounts to about $8,000, notwithstanding the fact that there have been 116 applications for assistance during the eleven years it has been in force. Not a single case in which the By-Laws have been strictly carried out has been lost. The only seeming exception to this statement is Case No. 69, where in 1916 a jury awarded a verdict of $4,812 against one of our members, but when a new trial was asked for, the plaintiff was forced to acknowledge to the court that she had perjured herself when giving testimony at the original trial. A new trial was ordered, but has been twice postponed at the request of the plaintiff, and it is not probable that the case will ever be tried again unless forced by the defendant. It is only just to mention that the individual trustees when supervising the defense of these alleged malpractice cases make no charge for their time though in some cases they are away from their offices and even from their homes for several days at a time. How could a physician better spend 75 cents a year than in thus enabling the profession to present a solid front against malpractice pilfering suits?

3. After taking out of the $2.75 the 85 cents designated by the By-Laws for the two abovementioned trust funds the trustees have left $1.90 for all the other activities of the society. One dollar of this, and no more, is devoted to editing, publishing and mailing The Journal, which places before every member the papers read at the annual session; the minutes of the House of Delegates; all official communications; reports of county societies when furnished; an up-to-date list of the officers and members of the component county societies with the post office address of each; a monthly change of address of such members; communications from the Bureau of Medical Education and Licensure and its examination questions; reports of various medical societies in the state; monthly news items (the more valuable in proportion as members supply items); communications furnished by members; notice of new books and reviews of some of them; advertisements of reliable new remedies, appliances, etc., offered the medical profession; and other matter thought to be of interest to the profession. Is this worth 8⅓ cents a month to you?

4. The remaining 90 cents per member for 1917 paid the salaries of the state secretary,

the treasurer and the manager; for the programs, stenographers, etc., for the Pittsburgh Session (the rentals charged exhibitors for space covered the expenses for meeting places, registration clerks, badges, etc); for traveling expenses, postage and stationery for the important committees; for postage, telegrams, telephones, stationery, blanks, etc., used by the secretary's office in its correspondence with the officers and members of the component societies and with the American Medical Association (in addition to an average of more than two letters a day from those not members); for part of the traveling expenses of the councilors and others in their efforts to keep up an efficient organization throughout the state; for certified audits, bonds, taxes, presentation gavel for president, etc., etc. Do you happen to belong to any club or lodge that gets along on 90 cents a year for overhead expenses? Our trustees not only met all overhead expenses mentioned in this paragraph, but they saved out of the 90 cents per member sufficient to invest $1,200 in Building and Loan Shares for the Endowment Fund. (The $5,000 used to purchase Liberty Bonds for the Endowment Fund in June, 1917, was largely taken from a balance in the general fund left over from 1916.)

WHAT WE NEED TO DO OUR BEST WORK

The officers of the society, past and present, have no apology to offer for the way the finances are managed, and if any member thinks that there are any sinecure positions in the society he may have a more detailed explanation than the space allowed this article will warrant. The $2.75 per member, however, is not sufficient to allow the society to do its best work, and the amount of the *per capita* assessment should be increased. The $100 a month being placed in Building and Loan Shares so that the Endowment Fund may provide for an emergency or for expansion, and the remitting of the 1918 *per capita* assessment of members in the service will leave but a small balance in the general fund at the end of this year. Can we not all keep smiling and increase our efforts to make our society and its activities better than ever? The Texas State Association this year raised its *per capita* assessment from $3 (the defense fund, general fund and journal each receiving $1) to $5 (the general fund and journal each receiving $2). Its journal for January contains an editorial, the last paragraph of which follows. What is good for Texas would probably be good and true for Pennsylvania.

> "These $3.00 worked pretty hard. They could not have been more economically expended. They have doubtless brought more to the donors than any other money spent by Texas doctors. The money is inadequate for present increased expenses, and merely an adequate sum is asked; give more and get more. There is hardly a labor organization or social club which would expect to accomplish anything with less than a dollar or two a month. If the interests of the profession were adequately cared for the annual dues would not be less than $25 and the doctors would receive therefrom enormous returns on bettered conditions for themselves and the public. The next year's *Journal* will be out of debt and be bigger and better for $2. The Association can accomplish twice as much with $2. So altogether for the $5 this year and a big work for the medical profession and public health of this state!"

TWO PSYCHOPATHIC HOSPITALS FOR PENNSYLVANIA

In discussion of the problems of the mentally unfit before the Allegheny County Medical Society, March 19 last, Mr. Francis Torrence, president of the State Board of Charities, expressed himself as in favor of two psychopathic hospitals for the state, one in Philadelphia and the other in Pittsburgh, equipped in accordance with requirements of modern psychiatry, to which acute cases should be sent. He pointed out that the talent and skill available in the universities of these two cities should be called into requisition for the work of these institutions and that both of them should be teaching institutions. In the discussion Dr. John A. Lichty, a member of the State Board of Lunacy, expressed himself as heartily favoring Mr. Torrence's plan and pointed out that if such psychopathic hospitals were set in operation they should conduct clinics for the mentally unfit, many of whom are not proper subjects for an asylum.

Such a hospital, the State Psychiatric Hospital, is now in operation in Boston, under Dr. E. E. Southard, and is doing splendid work. The mentally unfit, who are ill enough to go to hospitals for the insane, have received consideration and the intention is now, in the light of our best knowledge, to consider and at the same time try to do something for the large number of mentally unfit who are outside the walls of institutions.

A motion was presented to the society favoring the proposal of Mr. Torrence and Dr. Lichty for the establishment of two psychopathic hospitals in Pennsylvania with dispensaries attached thereto, and it is fully expected that the Board of Governors will pass this resolution.

T. D.

CHICAGO A. M. A. SESSION

The next session of the American Medical Association will be held in Chicago during the week beginning June 10. There will probably be a large attendance from Pennsylvania. For list of general and sectional headquarters see General News Items in this issue.

THE PHILADELPHIA SESSION

The Committee on Scientific Work will hold a meeting in Pittsburgh, May 14, at which time the program for the session in Philadelphia, September 24-27, will be completed. Members wishing to proffer papers for that session are invited to send title and brief outline of proffered paper to the chairman of the committee, Dr. Oskar Klotz, 4720 Wallingford St., Pittsburgh, before May 7.

COUNTY SOCIETY HONOR ROLL

The following societies have forwarded 1918 receipts and *per capita* assessments for as many members as they paid for in 1917. The figures indicate the percentage of membership paid as compared with 1917.

Carbon County,	109 per cent.
Juniata County,	109 per cent.
Lebanon County,	109 per cent.
Warren County,	107 per cent.
Union County,	106 per cent.
Columbia County,	102 per cent.
Clarion County,	100 per cent.
Wyoming County,	100 per cent.

The societies of Greene, Huntingdon and Warren Counties have paid for all of their 1917 members who are now living in the respective counties, but not for as many as they had last year.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported up to March 27:

Allegheny County: *New Members*—William C. Allen, Charles R. Brenner, Verner B. Collomon, Orlando L. Cook, S. J. Glass, Jr., Walter N. Goehring, Daniel I. Jamison, Robert R. Krueger, Samuel E. Lambert, Frank E. Luke, James Clay Mahan, Thomas F. Moore, Charles W. Morton, Irwin M. Pochapin, Daniel L. Rectenwald, Joseph M. Reed (by transfer from Westmoreland County Society), Milton S. Sell, E. Robert Wiese, Pittsburgh; Herbert S. Arthur, David C. Huffman, McKeesport; George E. Cramer, Sharpsburg; Arthur S. Haines, Wilkinsburg; Walter F. McComb, Tarentum; Cyrenius J. Newcomb, Bellefonte, R. D. 3 (Center County); Joseph R. Newell, Hays; John S. Plumer, Emsworth; George C. Seitz, Swissvale; William W. Sturgis, Glenshaw; James G. Warner, Gallatin. *Deaths*—Clarence S. Allison (Univ. of Pittsburgh, '08) in Pittsburgh, February 23, aged 32; Albert Homer Burkett (Miami Med. Coll., Cincinnati, '77) in McKees Rocks, February 12, from senile debility, aged 70. *Removals*—W. E. Brown from Pittsburgh to 511 South Ave., Wilkinsburg; John S. Cadwalader from Wexford to Meadville, R. D. 6 (Crawford County); Adam C. Davis from Hites to Creighton; Jacob W. E. Ellenberger from Wilkinsburg to 1102 Lincoln Ave., Tyrone (Blair County); Homer E. Halferty from Pittsburgh to c/o P. R. R., Station Agent, Homewood; Frank M. Kern from Pittsburgh to Broughton; F. Thoburn Nason from McKeesport to 589 Union Arcade Bldg., Pittsburgh; Fred A. Schlanger from Philadelphia to 5204 Butler St., Pittsburgh; John V. Wilson from West Elizabeth to 1332 Juniata St., N.S., Pittsburgh.

Beaver County: *New Member*—Charles W. Smith, Woodlawn.

Berks County: *New Member*—C. S. Canbough, Reading.

Bradford County: *Death*—Ferdinand A. Thompson (Coll. of Phys. and Surg., Baltimore, '85) in Durell, March 10, from a paralytic stroke, aged 66.

Bucks County: *Removal*—James W. Harper from Forest Grove to 5919 Alder St., Pittsburgh.

Butler County: *Removal*—Eugene Storer from West Winfield to 524 North Ave., Wilkinsburg (Allegheny County).

Cambria County: *Removal*—George I. Yearick from Lilly to Portage.

Carbon County: *New Members*—George P. Hill, Summit Hill; William H. Kastin, Lansford; Roger R. Rupp, Lehighton; Mahlon A. Wertman, Palmerton. *Removal*—Robert A. Christman from Palmerton to Kresgeville (Monroe County).

Clearfield County: *Death*—Samuel C. Stewart (Jefferson Med. Coll., '81) in Clearfield, March 11, aged 62.

Erie County: *New Members*—Jeffrey C. Douville, North East; Daniel W. Kramer, Erie.

Fayette County: *New Member*—Edgar K. Wells, Masontown. *Removal*—Henry S. Brown from Pittsburgh to Adah.

Greene County: *Withdrawn*—Lorenzo F. Millikin (gone to West Virginia).

Huntingdon County: *Removal*—James G. Koshland from Cassville to James Creek.

Jefferson County: *Removal*—Thomas F. Nolan from Reynoldsville to Latrobe (Westmoreland County).

Juniata County: *New Member*—Darwin M. Crawford, Mifflintown.

Lackawanna County: *New Members*—Joseph L. Conarton, Mayfield; W. H. Newman, Clarks Summit.

Lehigh County: *New Members*—Foster Beck, Walter Lang, Allentown.

Luzerne County: *New Members*—Freas B. Kleintab, Wyoming; Ziba Smith, West Nanticoke.

Lycoming County: *New Member*—Marian K. Frisbee, South Williamsport.

Northumberland County: *New Member*—Joseph W. Potter, Sunbury.

Perry County: *Death*—W. Homer Hoopes (Coll. of Phys. and Surg., Baltimore, '87) was thrown from a sleigh, suffering a fractured skull, and died from the injuries a few hours later, aged 55.

Philadelphia County: *Deaths*—George Mill (Medico-Chirurgical Coll. of Philadelphia, '02) in Philadelphia, March 6; Albert M. Moore (Medico-Chirurgical Coll. of Philadelphia, '05) in Philadelphia, March 6, aged 42. *Removals*—H. Conrad Egly from Kirkwood (Lancaster County) to Quarryville (Lancaster County); S. Finley Gordon from Howard, R. I., to Boston State Hospital, Mattapan, Mass.; John F. X. Jones from Atlantic City, N. J., to 1815 Spruce St., Philadelphia; Sargeant P. Martin from Rochester, Minn., to 414 Delaware Ave., Buffalo, N. Y.; William H. Walsh from Philadelphia to 728 Seventeenth St., N.W., Washington, D. C.

Schuylkill County: *New Members*—H. H. Holderman, Shenandoah; P. Ray Meikrantz, Pottsville; John J. Sweeney, Heckscherville. *Removal*—John D. Riley from Philadelphia to 200 East Mahanoy Ave., Mahanoy City.

Snyder County: *New Member*—Edward W. Tool, Selins Grove.

Warren County: *New Members*—Erwin S. Briggs, George Siggins, Tidioute; Roy S. Meals, Columbus; William H. Shortt, Youngsville.

Wayne County: *Removal*—George W. McCafferty from Arrow (Somerset County) to St. Michael (Cambria County).

Westmoreland County: *Transfer*—Joseph M. Reed to Allegheny County Society. *Removal*—Abraham Owaroff from Donora (Washington County) to 218 South Seventh St., Jeannette.

Wyoming County: *New Member*—Frank A. Detrick, Nicholson.

York County: *Death*—William H. McCurdy (Jefferson Med. Coll., '81) in Delta, March 21, from pneumonia, aged 64.

PAYMENT OF PER CAPITA ASSESSMENT

The *per capita* assessment for the year 1918 has been received from component county societies since March 9, as acknowledged on pages 403 and 404 of the March Journal, as follows:

1918				
3/11	Fayette	58–59, 61–77	1925–1943	$52.25
	Fayette	60*	1944	
	Huntingdon	1–19, 23–34	1945–1975	85.25
	Huntingdon	20–22*	1976–1978	
	Adams	21	1979	2.75
	Clinton	16	1980	2.75
	Juniata	9–10	1981–1982	5.50
	Potter	1–11	1983–1993	30.25
	Potter	12–13*	1994–1995	
	Northumberland	38–41	1996–1999	11.00
	Northampton	94	2000	
3/12	Lycoming	73	2001	2.75
	Westmoreland	14–85	2002–2073	198.00
3/13	Delaware	60–67	2074–2081	22.00
	Lawrence	17–21, 31–42	2082–2098	46.75
	Lawrence	22–30, 43*	2099–2108	
3/14	Mifflin	22-23	2109–2110	5.50
	Carbon	1–26	2111–2136	71.50
3/15	Westmoreland	86-87	2137–2138	5.50
	Adams	22	2139	2.75
3/16	Columbia	35-40	2140–2145	16.50
	Westmoreland	88–93	2146–2151	16.50
	Allegheny	238–276, 278–311, 314–315, 318–319, 321, 324–334, 337–432, 434–440, 442–466, 468	2152–2369	602.25
3/18	Montour	1–13	2370–2382	35.75
	Montour	14–16*	2383–2385	
	Potter	14–18	2386–2390	13.75
	Butler	16–24	2391–2399	24.75
	Wayne	23–26	2400–2403	11.00
	Juniata	11–12	2404–2405	5.50
	Mercer	29–43, 47–48	2406–2422	46.75
	Mercer	44–46*	2423–2425	
3/19	Potter	19	2426	2.75
	Clinton	17	2427	2.75
	Armstrong	35–49, 51–52	2428–2444	46.75
	Armstrong	50*	2445	
	McKean	1–40	2446–2485	110.00
	McKean	41–45*	2486–2490	
3/20	Westmoreland	94–95	2491–2492	5.50
	Monroe	12–13	2493–2494	5.50
	Luzerne	109–122	2495–2508	38.50
	Somerset	29	2509	2.75
3/21	Columbia	41–42	2510–2511	5.50
	Columbia	43*	2512	
	Clinton	18	2513	2.75
	Lycoming	59–72, 74–77	2514–2531	49.50
	Montgomery	97–103	2532–2538	19.25
	Montgomery	104–105*	2539–2540	
	Cumberland	27–28	2541–2542	5.50
	Clearfield	46–60	2543–2557	41.25
3/22	Schuylkill	46–64	2558–2576	52.25
	Venango	10–25	2577–2592	44.00
	Wyoming	16	2593	2.75
	Delaware	68–81	2594–2607	38.50
3/23	Columbia	44–45	2608–2609	5.50
	Montour	17–18	2610–2611	5.50
	Somerset	30–32	2612–2614	7.25
	Lackawanna	108–110. 112–117	2615–2623	27.50
	Lackawanna	111*	2624	
	Elk	19–21	2625–2627	8.25
	Beaver	38–49	2628–2639	33.00
	Erie	21–38, 42–49, 70–87	2640–2683	126.50
	Erie	39–40, 50–69*	2684–2705	
	Lancaster	1–88, 98	2706–2794	244.75
	Lancaster	89–97*	2795–2803	
3/26	Cumberland	29	2804	2.75
	Berks	74–97	2805–2828	66.00
	Franklin	32–45	2829–2842	38.50
	Dauphin	72–82	2843–2853	30.25
	Warren	20–26, 32–47	2854–2876	63.25
	Warren	27–31*	2877–2881	
	Jefferson	1–13	2882–2894	33.00
	Columbia	46	2895	2.75
	York	92–108	2896–2912	46.75
	Lebanon	15–22, 21A–22A	2913–2922	27.50
	Luzerne	123–135	2923–2935	35.75
	Butler	25–30	2936–2941	16.50
	Mercer	49–55	2942–2948	19.25
3/27	Carbon	27–30	2949–2952	11.00
	Blair	52–69	2953–2970	49.50
	Chester	1–42, 54–57, 60–76	2971–3033	162.25
	Chester	43–53, 58–59*	3034–3046	
	Lackawanna	118–121	3047–3050	11.00
	Monroe	14–20	3051–3057	19.25
	Northampton	95–105	3058–3068	30.25
	Bradford	28–36	3069–3077	24.75
	Bradford	37–39*	3078–3080	

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* Dues remitted.

3/28	Luzerne	136–138	3081–3083	8.25
	Mifflin	24	3084	2.75
	Wayne	27–30	3085–3088	11.00
	Monroe	21	3089	2.75
	Franklin	46–47	3090–3091	5.50
	Lawrence	44	3092	2.75
	Susquehanna	1–14	3093–3106	38.50
	Montgomery	106–123	3107–3124	49.50
	Montgomery	131–132*	3125–3126	
	Lehigh	41–75	3127–3161	96.25
	York	109, 111–117	3162–3169	22.00
	York	110*	3170	
	Crawford	30–34, 36–50	3171–3190	55.00
	Crawford	35*	3191	
	Bucks	67–80, 82	3192–3206	41.25
	Bucks	81*	3207	
	Clarion	30–34	3208–3212	8.25
	Jefferson	14–25	3213–3224	33.00
	Northumberland	42–47	3225–3230	16.50
	Westmoreland	96–100	3231–3235	13.75
	Lancaster	99–123, 126–127	3236–3262	74.25
	Lancaster	124–125*	3263–3264	
	Snyder	13–14	3265–3266	5.50
	Somerset	33–37	3267–3271	14.75
	Clearfield	61–67, 69	3272–3279	22.00
	Clearfield	68*	3280	
	Venango	26–35	3281–3290	27.50
	Blair	70–71	3291–3292	5.50
	Lebanon	23–27	3293–3297	13.75
	Schuylkill	65–80	3298–3313	44.00
	Mercer	56–63	3314–3321	22.00
	Lackawanna	122–123	3322–3323	2.75
	Jefferson	26–54	3324–3352	82.50
3/29	Mifflin	25–26	3353–3354	5.50
	Wayne	31	3355	2.75
	Lebanon	28–35	3356–3363	22.00
3/30	Tioga	1–10, 12–22	3364–3384	57.75
	Tioga	23–25*	3385–3387	
	Carbon	31–34*	3388–3391	
	Montgomery	124	3392	2.75

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* Dues remitted.

STATE NEWS ITEMS

BORN

To Dr. and Mrs. Grant H. Gustin, Sylvania, in Sayre, recently, a daughter.

MARRIED

Dr. Charles J. Bowne, Philadelphia, and Miss Miriam Strouse, Rowland Park, Baltimore, February 23.

Dr. Jacob R. Brobst and Miss Grace Zehner, both of Bloomsburg, at Ayer, Mass., February 27.

Dr. Henry Keller Mohler and Miss Nellie Whitely, both of Philadelphia, February 21.

DIED

Dr. Alexander Cooke Butcher (Medico-Chirurgical Coll. of Philadelphia, '91) in Philadelphia, February 22.

Dr. Leonard Kelly (Bellevue Hospital Med. Coll., New York City, '66) at Olyphant, March 1.

Dr. James R. Humes (Hahnemann Med. Coll and Hosp., Philadelphia, '74) in Hollidaysburg, March 10, aged 69.

Dr. Kurr W. Ostram (Royal University of Upsala) in Quakertown, March 20, from pneumonia, aged 52.

Dr. Granville M. Brubaker (Baltimore Med. Coll., '94) in Waynesboro, March 15, aged 49.

ITEMS

Capt. Evan O'Neill Kane, Kane, is on duty at Fort Oglethorpe, Ga.

Dr. J. Solis Cohen, Philadelphia, celebrated his eightieth birthday anniversary, February 28.

Dr. Lemuel Offutt, Greensburg, has been confined to his house for several weeks by sickness.

Dr. Samuel P. Longstreet has been appointed director of the Scranton Health Department.

Dr. Roger P. Batchelor is the new superintendent of the Palmerton Hospital, succeeding the late Dr. John W. Luther.

Dr. Lawrence F. Flick, Philadelphia, was, on March 11, reelected president of the White Haven Sanatorium Association.

Dr. A. C. Morgan, Philadelphia, addressed the Lackawanna County Medical Society, February 26, on "Post-Pneumonic Complications and Their Treatment."

Dr. Walter W. Seibert, Easton, was elected president of the Lehigh Valley Homeopathic Medical Society at its annual meeting held in Bethlehem, March 28.

Dr. F. L. Marsh, Mount Pleasant, celebrated his fiftieth year of practice of medicine on March 11. He was graduated from the Jefferson Medical College, March 11, 1868.

Dr. Henry D. Jump, president of the Philadelphia County Medical Society for 1917, was, on February 27, presented a gavel with appropriate remarks by President F. C. Hammond.

Major Henry D. Jump met with the Texas Committee of the Council on National Defense, Medical Section, in Dallas, March 27, in an effort to secure more Texas physicians for the Army.

Dr. James Johnston, Councilor for the Eighth District visited the Crawford County Medical Society at Meadville, February 14, and addressed the society on "Foods and High Blood Pressure."

Dr. Edward Ryan, Scranton, who has been with the American Red Cross in Europe for several years, suffered a fracture of the left arm in Saloniki, Greece, recently, when his auto turned turtle.

Dr. Ida E. Blackburn, Greensburg, presented a service flag to the Westmoreland County Medical Society, February 5, in recognition of the forty members who have gone into military service.

Dr. Benjamin F. Royer, acting commissioner of health, delivered the memorial address on the late commissioner, Dr. Samuel G. Dixon, at the Academy of Natural Sciences, Philadelphia, April 9.

Sousa Plays for Allentown Camp.—Lieut. John Philip Sousa, U. S. N. R. F., directed the concert given by the Usaacs Band, Camp Crane, Allentown, on Sunday evening, March 24. Civilians were admitted if accompanied by a soldier.

Dr. R. Max Goepp, after fifteen years of faithful service as dean of the Philadelphia Polyclinic and College for Graduates in Medicine, has resigned the deanship, and Professor George H. Meeker has been appointed dean of the Post-Graduate School of the University of Pennsylvania.

Lackawanna Has Patriotic Evening.—The Lackawanna County Medical Society observed February 5 as patriotic day at which time a service flag was presented in honor of the thirty-nine members in the service. Addresses were made by Rev. George W. Wellburn, Attorney M. J. Martin, and Lieut. T. E. Allen of the British army, who told of his experience at the front during the first three years of the war.

Protecting Practice of Soldier Physician.—The Medical Protective Committee of the Allegheny County Medical Society has paid $2,507.57 to absent doctors; $1,851.25 to doctors at home and still holds in trust $636.52 for absentees who have not designated where they wish their collections put.

Dr. Spencer M. Free, Dubois, councilor for the fifth district, attended the meeting of the Blair County Medical Society at Altoona, March 26. At that meeting Dr. Frank Woodbury, secretary of the State Committee on Lunacy, addressed the society on the "Commitment of the Insane of Pennsylvania."

State to Care for Wounded.—March 21, Governor Brumbaugh appointed a committee to form plans for the physical restoration, education and employment of convalescent and disabled soldiers. The committee will cooperate with the Surgeon-General's Office in Washington, D. C., and various schools in the state will provide quarters and training.

Correction: Dr. Stieren, in discussing Dr. Renninger's paper on "Corneal Ulcers," page 298, February Journal, said: "In addition to the routine treatment we use, once or possibly twice a day for very severe cases, an application of 1 per cent. nitrate of silver to the everted lids, etc.," instead of 10 per cent. to the inverted lids, as quoted.

Dr. Charles H. Frazier has received word to hold himself in readiness to mobilize what is now known as Government Head Surgery Hospital No. 11 and consisting of 1,000 beds. Before its departure for France Major Frazier will increase its capacity to 2,500 beds, and it will then be known as Overseas Base Hospital No. 115.

War on Mosquitoes.—The Philadelphia city council has been asked by Director of Public Work Datesman to appropriate an additional $20,000 for a campaign to exterminate mosquitoes in the vicinity of the League Island Navy Yard and the Hog Island shipbuilding plant. An appropriation of $10,000 for that purpose has already been made. Director Datesman is especially anxious to have the second appropriation at once, because now is the time to make effective warfare on the mosquito.

War on Mosquitoes.—An engineering and public health conference was held in the office of the acting commissioner of health of Pennsylvania in the Academy of Natural Sciences, Philadelphia, March 29, to consider extensive drainage operations looking toward the abatement of stagnant water nuisances and mosquito breeding areas in marsh lands in the vicinity of the great Fleet Corporation Shipyards on Hog Island, and about the extensive war industries in Tinicum Township, Delaware County and the Philadelphia Navy Yard at League Island. The plans contemplate extensive ditching, repairing of dikes, accelerating movement of water by a number of pumping stations, together with the cleansing of ditches. cutting of swamp vegetation, oiling and treating with larvicide of all pools susceptible to such treatment only. One hundred thousand men are engaged in war industries in this district, and night shifts are impossible during the mosquito season. Representatives of the Philadelphia Department of Public Health and Public Works, of the Navy Fleet Corporation, three railways and many industries, a total of thirty-five people, were present. Dr. B. Franklin Royer, acting commissioner of health, presided at the conference.

Course in Neurologic Surgery at Philadelphia.—A third course in neurologic surgery for medical reserve officers to be given under direction of the Surgeon-General's Office has been started in Philadelphia, and is now being conducted at the Jefferson, Philadelphia General and University hospitals. It covers ten weeks, with thirty-one hours of work a week, and includes demonstrations, lectures, clinics and quizzes. Operative clinics are held eight hours a week at the University and Jefferson hospitals, and special lectures by authorities from other cities are arranged for from time to time. The teaching staff includes Drs. Charles W. Burr, John Chalmers DaCosta, John B. Deaver, G. M. Dorrance, E. L. Eliason, George Fetterolf, Lewis Fisher, Charles H. Frazier, T. B. Holloway, Chevalier Jackson, John A. Kolmer, Paul A. Lewis, James H. Lloyd, S. DeW. Ludlum, D. J. McCarthy, J. W. McConnell, R. Tait McKenzie, Charles K. Mills, George P. Müller, H. K. Pancoast, George A. Piersol, Charles S. Potts, William C. Posey, B. Alexander Randall, William G. Spiller, B. A. Thomas, T. T. Thomas, T. H. Weisenburg, Andrew H. Woods, William Zentmayer, Majors Thomas Johnson and George M. Piersol, and Capt. Laurence Selling, Portland, Ore.

Death Rate.—According to statement issued March 29, the general death rate for Pennsylvania, since the creation of the state department of health, according to statistics of the department, just compiled up to the end of 1917, shows a gradual downward tendency. In 1906 the death rate stood at 16 a thousand population, and in 1915 it reached the remarkably low record of 13.8. During the latter part of 1916 a widespread prevalence of pneumonia, influenza and similar disorders was noted throughout the state and the unusual prevalence extended into the early months of 1917. The large number of deaths from these causes, especially among persons advanced in age, was largely responsible for the slight increase in the death rate for 1916 and 1917, the rate for 1916 being 14.6, and for 1917, 14.8. The health department's figures for 1917 show the death rate from such quarantinable diseases of childhood as measles, scarlet fever and whooping cough to have been the lowest in the history of the department. The death rate for measles for the year was 5.9 a hundred thousand of population, while the best previous death rate from this disease was 6.4 in 1915, and 6.7 in 1914. The death rate for scarlet fever is an entirely new low record, 2.4 a hundred thousand, the best previous year's record having been 2.6 in 1916, while in 1915 it was 3.5. The death rate for whooping cough, 10.8 a hundred thousand, was lower but once since the department was created twelve years ago, that for the year 1915. In all prior statistical years the rate ranged from 10 to 21 a hundred thousand of population.

GENERAL NEWS ITEMS

The American Red Cross is said to have used $90,000,000 for war work, and on May 6 will begin the raising of a second $100,000,000.

The Families of Milwaukee Physicians now in service will receive $775 monthly from a fund subscribed by a few residents of that city, the names of whom are not made public.

The Medical Society of the State of New York will hold its next annual session in Albany, May 21-24, 1918. For particulars consult the secretary, Dr. Floyd M. Crandall, 17 West Forty-Third Street, New York.

James M. Munyon, the manufacturer of homeopathic patent medicines, died at the Poinciana Hotel, Palm Beach, March 10, aged 70. It is said that he spent more money in advertising his medicines than any other manufacturer. His son is disputing the will which leaves some of his millions in a way that seems not to be satisfactory.

Medical Unit for Palestine.—A gift of $100,000 has been announced by the joint distribution committee of the American Jewish Relief Committee for the medical unit of Hadassah, which will leave for Palestine within a few weeks. The British government will cooperate in assuring a safe and speedy transportation of the medical unit.

Swoboda Shown Up.—The *Journal of the A. M. A.* for March 16 devotes three pages to an exposé of the Swoboda quackery. One quotation from his booklet is sufficient: "I positively guarantee to restore youth to you, regardless of how old you may be. I guarantee to eradicate old age completely and permanently, I guarantee to give you perpetual youth."

Kansas City, Mo., Makes Social Diseases Reportable.—By unanimous vote, the city council of Kansas City has passed ordinances ruling that persons who have social diseases are reportable for isolation and treatment, prohibiting all persons from pandering or from living as inmates of disorderly houses, and making it a misdemeanor for an owner or driver of a public conveyance to solicit the patronage of questionable places.

Control of Social Diseases.—At Omaha an ordinance has been prepared declaring that an emergency exists in Omaha in connection with the prevalence of social infections, and requires that the diseases be reported. The health commissioner is ordered to isolate the victims for such time as may be necessary. The health officer, Dr. Ralph W. Connell, Omaha, has ruled that in the occurrence of social diseases, men and women must be treated alike, and that they will be held under equal penalties.

Ellis Island Ready to Receive Wounded Soldiers.—The United States Department of Labor has made a definite agreement whereby Ellis Island has been turned over to the Army and Navy. It is the intention of the Navy Department to use the space allotted to it for the accommodation of several thousand sailors pending their assignment to ships, and the War Department expects to use its portion of the space for temporary quarters for wounded men before removing them to permanent hospitals. Part of the property has already been occupied by the military branches of the government.

Council on Pharmacy and Chemistry.—Since the last report the following articles have been accepted for inclusion in New and Nonofficial Remedies: Chlorcosane, barbital-Abbott, procaine-Abbott, The Abbott Laboratories; arsenobenzol (Dermatological Research Laboratories) 1 gm. ampules, Dermatological Research Laboratories, Philadelphia Polyclinic; typhoid vaccine, prophylactic, typhoid vaccine, therapeutic, typhoid mixed vaccine-Lilly, Eli Lilly and Company; mercury benzoate-Merck, Merck and Company; halazone-Monsanto, Monsanto Chemical Works; Bulgarian bacillus, friable tablets, H. K. Mulford Company.

The National Conference of Social Work will hold its forty-fifth annual session in Kansas City, Mo., May 15 to 22. For further particulars write William T. Cross, General Secretary, 315 Plymouth Court, Chicago. It may be said that the National Conference of Social Work is the one great nationwide medium of exchange between individual social, health, prison, recreation, industrial, relief and other workers and between organizations and communities all over the United States and Canada interested in the "how and why" of community well-being. The meeting and the program are both most interesting, timely and complete.

Posture League.—The annual meeting of the American Posture League in New York City, March 9, closed with a dinner for the honorary boards at the Aldine Club. The following officers were elected: Miss Jessie H. Bancroft, president; Major Frederick R. Green, M. R. C., U. S. Army, Chicago, vice president; Dr. Henry Ling Taylor, New York City, secretary, and Dr. Percy W. Roberts, treasurer, New York City. The reports for the year showed great activity along lines created by war conditions, indicating a quickened public conscience on the subject of health. The technical committees of the league reported that the work for the year was completed on factory and school seats, and shoes and other articles of clothing for men, women and children.

Prenatal Letters.—The *Public Health Bulletin*, Boston, for September, 1917, contained an announcement that the department had prepared a series of nine "Prenatal Letters," one for each month of the pregnant period. These letters are intended for distribution, at monthly intervals, to expectant mothers whose application may be made to the department direct, or may be transmitted to the department through the attending physicians, visiting nurses, etc. Specimen sets of the letters will be gladly sent to any physician on request. The cooperation of all physicians is sought in the circulating of these letters, which are intended to help reduce the high infant mortality rate in Massachusetts, which is about 100 per thousand infants born. Application should be addressed to the Division of Hygiene, State Department of Health, Boston.

International Surgical Society.—It was agreed at a meeting of delegates of the International Surgical Society from Belgium, France, Great Britain, Serbia and the United States of America, held in Paris, Nov. 3, 1917, that: 1. The International Surgical Society be dissolved after the publication of the Volume of Transactions of the meeting held at New York City, April 14, 1917. Should any money remain after the publication of the volume such money will be divided pro rata among members. Each member of the Austro-German will receive his share; but the money belonging to members from other nations will be retained and applied to some object of scientific reparation in Belgium. 2. A new society will be created after the war on a similar basis, to be called the "Inter-Allied Surgical Society." Surgeons of neutral countries may also be elected members.

The Chicago Session of the A. M. A.—The Local Committee on Arrangements for the Annual Session of 1918 to be held in Chicago, June 10-14, is actively engaged in perfecting plans for the comfort and entertainment of the Fellows of the Association and their guests. All correspondence with the Local Committee on Arrangements or with any of its subcommittees should be addressed to 25 East Washington Street, Chicago.

The chairman of the subcommittee on clinics, Dr. Charles F. Humiston, announces that there will be a series of clinics for the Fellows of the Association on Thursday, Friday and Saturday, June 6, 7 and 8, and on Monday and Tuesday, June 10 and 11.

Alumni and section dinners will be held on Wednesday evening from 6 to 8 o'clock so as not to conflict with other events which are being planned. The chairman of the subcommittee on alumni and section entertainment, Dr. J. H. Stowell, announces that his committee is cooperating with officers of alumni associations in arranging for reunions.

"Milk, the Indispensable Food for Children," is the title of a recent report of the Children's Bureau of the U. S. Department of Labor. Here are two quotations: "The nourishment of our children is the first duty of the nation. Since milk and milk products are a vital necessity for children, for nursing mothers, and for the sick and wounded, the public should be made to realize that the children's need for dairy products should be assured." "It is the duty now of every individual community to see that its children have milk of good quality and in sufficient amount to assure their normal development. To do this the price of milk must be controlled or fixed, and the milk supply to infants and children carefully safeguarded. The malnutrition of our children was, even before 1914, a serious national problem and one demanding urgent attention. Poverty and ignorance of dietary essentials have been ever-present factors in the malnutrition of the young, and war conditions cannot fail to increase the gravity of the situation and the difficulties of maintaining the health of the nation."

Promotions in Medical Corps.—Section 10 of the national defense act provides that persons hereafter commissioned in the Medical Corps shall be promoted to the grade of captain after five years' service in the Medical Corps and on passing the examinations prescribed by the President for promotion. Public 86, Sixty-Fourth Congress, provides that during the present emergency first lieutenants in the Medical Corps of the Regular Army and of the National Guard shall be eligible to promotion as captain on such examination as may be prescribed by the Secretary of War. Construing these provisions together with Section 114 of National Defense Act, it is held that all vacancies in the Medical Corps must be filled by permanent or temporary promotions, according to the character of the vacancy, of officers in the Medical Corps below the grade in which the vacancy exists, in order of seniority, subject to the required examinations. Temporary appointments can be resorted to only when possibilities of promotions by seniority have been exhausted. (Ops. J. A. G. 210.2, Nov. 6, 1917.)

Code of Lighting School Buildings.—The Illuminating Engineering Society announces that the revised edition of its Code of Lighting School Buildings is now being placed in type. It will be remembered that the first edition was circulated several months ago for the purpose of obtaining discussions and criticisms. As a result about 100 communications have been received from lighting experts, architects, educators and school superintendents. These have been carefully considered by the Committee on Lighting Legislation in its revision of the technical data and principles of school lighting which are embodied in the code. Some 20,000,000 school children in the United States daily perform work trying to the eyes. Proper illumination is essential. Available statistics show that nearly 10 per cent. of the school children, who have been examined, have defective vision. The enactment of rules and regulations and the dissemination of knowledge relating to correct lighting conditions is one of the most important needs of our educational institutions and legislative bodies. While the code is intended primarily as an aid in formulating legislation relating to the lighting of school buildings, it is also intended for school authorities as a guide in individual efforts to improve lighting conditions. The society will be glad to sell this revised edition of the code at cost to interested parties on application to the General Offices, 29 West Thirty-Ninth Street, New York, N. Y.

Hotel Headquarters for the Chicago Session of the A. M. A.—The following hotels have been tentatively designated as general and section headquarters for the Chicago Session, June 10 to 14: General Headquarters: Hotel Sherman, North Clark and West Randolph. Practice of Medicine: Hotel Morrison, 83 West Madison. Surgery, General and Abdominal: Auditorium Hotel, 430 South Michigan. Obstetrics, Gynecology and Abdominal Surgery: Congress Hotel, South Michigan and Congress. Ophthalmology: Hotel LaSalle, LaSalle and West Madison. Laryngology, Otology and Rhinology: Hotel LaSalle, LaSalle and West Madison. Diseases of Children: Congress Hotel, South Michigan and Congress. Pharmacology and Therapeutics: Auditorium Hotel, 430 South Michigan. Pathology and Physiology: Auditorium Hotel, 430 South Michigan. Stomatology: Congress Hotel, South Michigan and Congress. Nervous and Mental Diseases: Blackstone Hotel, South Michigan and East Seventh. Dermatology: Blackstone Hotel, South Michigan and East Seventh. Preventive Medicine and Public Health: Auditorium Hotel, 430 South Michigan. Genito-Urinary Diseases: Auditorium Hotel, 430 South Michigan. Orthopedic Surgery: Congress Hotel, South Michigan and Congress. Gastro-Enterology and Proctology: Auditorium Hotel, 430 South Michigan. Scientific Exhibit, Registration Bureau, Commercial Exhibit, Information Bureau, and Branch Postoffice: Hotel Sherman, North Clark and West Randolph.

BULLETIN EXCERPTS

MEDICAL MONTHLY, BUCKS

The Voice of Freedom

A Voice is sounding full and clear above the bugles and the drums;
Its echoes ringing far and near, a world-wide summons it becomes;
It ceases not by day or night, thro' every pause it rings again,
For Freedom from her starry height is calling to the sons of men!

Her tone majestic is, but sweet. No ear such harmony has heard
In martial band on plain or street, in organ swell or piping bird;
O'er land and sea, o'er tower and mart, its grand reverberations roll;
It touches every human heart! It stirs the depth of every soul!

O Voice benignant and sublime! Within thy summons never sleep
The joy that heals the wounds of time, the hope that brightens eyes that weep;
Thou art the herald of the day, the trumpet heard o'er hill and glen,
That ushers in the blissful sway of peace on earth, good will to men!

O ye for whom the joyful sound prolongs its echoes far and near,
Break every chain that Hate has bound, for Freedom's Voice is ringing clear;
It thrills where tempests roar and rave, it sings above the daisied sod;
It hath a strain divinely grave! It soundeth like the Voice of God!

R. O.

MEDICAL REPORTER, CHESTER

Medical books and periodicals accumulate in a doctor's office in a most unaccountable way. If the doctor has the bump of order he will carefully replace the books on the shelf after using them and file the periodicals in the place where they belong. Many doctors, including ourselves, do not have this happy faculty. We get down a half a dozen books to look up some question and leave them on our desk. The maid comes along and replaces them on the shelves without any reference to where they came from. Moreover, many medical books that were good and useful in their day have become obsolete and useless now, but they are allowed still to occupy valuable space in our library.

We recently realized that our office had degenerated into a state of chaos because of the conditions above described, and we concluded to take a Sunday afternoon off to restore it to something like order. We divided our books into three classes and assigned a certain space to each class. On the top shelves we placed those books that had been our main dependence twenty-five or thirty years ago, but were now replaced by more recent works. In this class we regretfully placed such books as Keating on "Diseases of Children," Warren's "Surgical Pathology," and most regretfully of all, Flint's "Practice of Medicine," which had been the guide of our medical youth.

On the part of our shelves furthest from our desk we placed those books that are seldom referred to, Reports of Societies and of Institutions, bulky Encyclopedias of Medicine (bought in a moment of weakness and inability to withstand the hypnotic influence of a plausible book agent), and certain medical classics whose interest will never die but once read are not often referred to, such as Beaumont's account of his experiments on Alexis St. Martin, Meig's "Obstetrics," interesting only because it called forth that other occupant of this shelf, Oliver Wendell Holmes' essay on the infectious character of puerperal fever which annihilated Meig's theory and made a great contribution to American medicine. In this class also we placed "The Genuine Work of Hippocrates," "Anomalies and Curiosities of Medicine," by Gould and Pyle, "An Alabama Student and Other Essays," by Osler, Garrison's "History of Medicine," and many other books that ought to be owned and read by doctors.

In the part of our shelves nearest our desk and within easy reach we placed those books to which we constantly refer and in the most convenient place of all is Osler's "Practice of Medicine," valued for its own sake as a storehouse of correct and available knowledge no less than because it is a reminder of a delightful association with a beloved master. Close at hand are medical dictionaries and "Monographic Medicine," Forcheimer's "Therapeusis of Internal Diseases." Musser and Kelley's "Treatment," Bastedo's "Materia Medica," Ander's "Diagnosis," Scudder's "Fractures," Peterson's "Obstetrics," Church and Peterson's "Mental Diseases," Morrow's "Diagnostic Technic" and many others. And thus we think we have restored our library to its proper function, a quickly available source of practical knowledge, a "help in time of trouble."

REPORTER, CHESTER

We also hear that Dr. Roger Samuel, ex-resident physician at the Chester County Hospital, is in the British Expeditionary Force and is stationed at St. Omer, France. He has medical charge of three Hampshire regiments stationed 3 miles apart. He makes his rounds on horseback. He was formerly attached to a Newfoundland regiment.

ACADEMICIAN, DAUPHIN

A Splendid Meeting

The last meeting of the Dauphin County Medical Society was one of unusual interest. Dr. Miller's talk was very interestingly illustrated and imparted a great deal of information that was new to most of us. Not all of us have the opportunities to visit the various sanatoriums to become acquainted with the great work done in those places. This certainly should act as a stimulus for us to visit these places and become familiar with what is being done that we can intelligently tell our patients what this great state is doing for its unfortunates.

Your Brother Physician—Are You Treating Him Right?

Don't forget your promise to your absent Medical Brother, made before he went into active service for his country and your country to take care of your neighbor's son and perhaps your own brother. Remember he is lonely and possibly a little homesick. A letter to him and possibly a cigar might help him along, but most of all don't forget his patients, just a little one third as you promised him. It does not take long to ask a new patient who their doctor was prior to calling on you. The secretary knows that most of you are loyal, but you who are not please get together and make his burden lighter by sending him or his wife what you promised.

THE MIRROR, FAYETTE

OUR SERVICE FLAG

On the evening of April 4 the remaining members of the Fayette County Medical Society will convene for the purpose of doing honor to those members of the society who have so patriotically given up the comforts of their homes, the embrace of their loved ones and the pleasures of their profession in order that their skill might be used for the relief of human suffering in the cantonments of our own and in the battle trench of a foreign country.

The evidence of our admiration for those who have so proudly and so willingly offered their all for the lives of their fellow men is feebly symbolized by the blue star on a field of white garnished with red. Each star represents one of our members who if need be is ready and willing to lay down his life in order that another life might be saved. The white field is the nobility of the purpose for which each one is willing to make the extreme sacrifice, and the red border represents the blood that will be spilled if need be to keep posterity at liberty and peace with the world.

Dr. Bell of Dawson, whom we all know so well both as a physician and as a man of rare literary ability, will no doubt give us an address upon that occasion which will go down in the history of the county society as one that we will be proud to refer to in years to come, when we shall all be able to gather at a banquet table for a general thanksgiving that our brother members have been returned to us unbroken in health and with the broad knowledge acquired of experience, privations and dangers.

Some one has said that we can not all be Lincolns and save a nation, but we can put the spirit of Lincoln into every trifle of our living—his simplicity, courage, kindness, love, consecration and justice. The greatest good to the world is not the magnificent power of a few great men manifesting it on a colossal scale but these same qualities, in a smaller, humbler way, manifested in millions of simple, unknown lives throughout the world. We hear only of the great leaders in this great war, but we all know that it is the privates, the corporals, the sergeants and the lieutenants who have to bear the dangers, the hardships and the privations of the campaign; in other words, it is not the magnificent power of a few great men manifesting it on a colossal scale but the qualities of simplicity, courage, kindness, love, consecration and justice in a smaller, humbler way manifested in millions of simple, unknown lives.

Let us all meet, therefore, to do honor to our brother members who are making unknown sacrifices for us and for all and, during it, let us not forget their families who are still with us, looking to us for the friendship, the love, and the guidance which this society as a body and each member as a unit can well afford to bestow.

BOOKS RECEIVED

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

THE PRACTICAL MEDICINE SERIES. Comprising ten volumes of the year's progress in Medicine and Surgery. Under the General Editorial Charge of Charles L. Mix, A.M., M.D., Professor of Physical Diagnosis in the Northwestern University Medical School. Series, 1917. Volume IX, Skin and Venereal Diseases. Edited by Oliver S. Ormsby, M.D., Professor and Head of the Department of Skin and Venereal Diseases, Rush Medical College; and James Herbert Mitchell, M.D., Hyde Memorial Fund Fellow, Assistant in Cutaneous Pathology, Rush Medical College. Price $1.35. Volume X, Nervous and Mental Diseases. Edited by Hugh T. Patrick, M.D., Professor of Neurology in the Chicago Polyclinic, Clinical Professor of Nervous Diseases in the Northwestern University Medical School, Ex-President Chicago Neurological Society; and Lewis J. Pollock, M.D., Instructor in Nervous and Mental Diseases, Northwestern University Medical School. Price $1.35. Chicago: The Year Book Publishers. Price of series of ten volumes, $10.00.

POSTGRADUATE MEDICINE, PREVENTION AND TREATMENT OF DISEASE. By Augustus Caille, M.D., F.A.C.P., Member of the American Medical Association; Fellow of the New York Academy of Medicine; Fellow of the American Congress of Internal Medicine; Member and Ex-President of the American Pediatric Society; Emeritus Professor of Medicine and Consultant to Department of Pediatrics, New York Post-Graduate Medical School and Hospital; Visiting Physician to the German Hospital; Consulting Physician to Isabella Home and Hospital and Sea Cliff Convalescent Home, etc. Profusely Illustrated. New York and London: D. Appleton and Company, 1918.

COMMUNICATION

ANESTHETISTS

158 Summer Street, Somerville, Mass.,
March 12, 1918.

To the Editor:—I receive many medical publications, but none that I give a more hearty welcome than yours. I may be rushing "in where angels fear to tread." If so, one is justified in the search of knowledge. I notice among your general news items that an attorney-general has decreed that "anesthetists need not be physicians." No doubt this is in accordance with the statute, but what qualifies the statute? I anticipate the reply, "Supreme legislative branch of a government." I thought to score a point by looking up the definition of anesthetist in the medical dictionaries, and was surprised to find that Morton became an anesthetist when he first administered an anesthetic to Eben Frost. I should define anesthetist as one best qualified to assume the responsibilities in the use of anesthetics, including of course diagnosis, sufficient preparation and equipment for all emergencies. The anesthetist should be the first to call the operator's attention to any unfavorable symptoms, and act promptly, for when they occur there is usually only time for action. A competent anesthetizer would detect a signal of danger that might escape the observation of one less proficient or even the surgeon who may have encountered an unexpected lesion that was fully occupying his attention. It is accepted that deaths, under anesthetics, from organic changes in the heart, arteries, kidneys and vital centers in the brain, discoverable only by the agency of autopsy, are beyond all human skill; but, are there no deaths from anesthesia that could be prevented? If so, our duty is evident. Is it also probable that a surgeon can perform a difficult operation and properly superintend the anesthetization of the patient? If not, the law of justice and humanity should demand a trained physician for that purpose. This would also give the younger practitioner a position he should be prepared to fill.

While we view with interest the resolute individual unsystematized efforts, and credit and appreciate the progress made, I think, nevertheless, we must look to the higher sources of medical and dental education, through their laboratories of research and competent teaching, to prepare the way for a more earnest, intelligent cooperation in the search for the desired discovery of hidden knowledge. The field of anesthetics and anesthesia is teeming with the ripening grains of relief and benefit and is patiently waiting to be rescued from deleterious properties and methods through the agency of the light of scientific study, research, experience and acquired technic. Who will be the fortunate, proud gatherers of this precious harvest? To this purpose the medical and dental schools should no longer hesitate to discharge the full responsibilities they cannot escape, by giving the increased facilities for study and research that this prominent and humane subject demands. This should include teachers chosen solely for their ability to meet the requirements, and these instructors should be relieved from any monetary anxiety so that they can the better concentrate their energies on the important task under consideration. To this end, it might be of interest to know that a chair of research and teaching has been arranged with a university of renown and ample laboratory facilities and sufficient endowment to command able investigators.

Cordially yours,

Henry I. Dorr.

SOCIETIES

SECTION ON GENERAL MEDICINE OF COLLEGE OF PHYSICIANS OF PHILADELPHIA

Meeting of December 17, at 8:30 p. m., Dr. M. Howard Fussell in the Chair.

The Dust Hazard in Certain Industries, by Drs. T. Grier Miller and H. F. Smyth of the Clinic for Diseases of Occupation of the University of Pennsylvania. Dr. Miller: Dust samples were collected directly from the air at the respiration level in sixty-five departments of nine separate industries, five handling inorganic and four organic materials. The method recently devised by Palmer of the New York State Commission on Ventilation was employed in the work. By our studies we determined the dustiness of the industries, judged by the weight of the dust and the number of its particles, the percentage distribution of the particles according to their size, and most important of all, the inorganic content of the dusts. Our studies justify the following conclusions: 1. For a complete understanding of the dust problem in industry there must be considered, not only its weight but the number of the particles, whether they are organic, or inorganic, and their percentage distribution according to size. 2. The order of the industries studied in regard to dustiness as determined by weight was: Portland cement, plush, carpet, blanket, flint grinding, steel grinding, asbestos, felt hat, pottery, cigar, and silk. 3. The order as determined by count of the particles was the same, except that the asbestos, plush, carpet, blanket, and the felt hat industries were given lower positions. This was due largely to fibers in these dusts which it was impossible to include in the counts. 4. The so-called organic dusts were invariably composed of both organic and inorganic materials, and the latter ingredient may account for the harmful influences which have been attributed to certain of these dusts. 5. The organic dusts averaged less both in weight and in count than the inorganic dusts. 6. The percentage distribution of the different sized particles was curiously similar in all the samples, and it may be assumed that slightly more than half of all dust particles countable by the method employed are about one micron in greatest diameter, the others ranging up to forty microns. 7. Dust removal at the point of production, not only greatly decreases air dustiness, but removes the smaller particles. 8. The substitution of wet processes for dry ones effectively lessens air dustiness. 9. Air dustiness varies inversely with relative atmospheric humidity, as does also the percentage of the larger dust particles.

Dr. H. R. M. Landis: I have had the good fortune to be associated with Dr. Miller in this work which, so far as I know, is the first thoroughly scientific study made of the subject. Two centuries ago attention was called to the deleterious effects of dust. The difficulty in connection with the study is that all dusts are considered equally bad. Within the last few decades they have been regarded as extremely likely to produce pulmonary tuberculosis. Pathologic proof is lacking that organic dust produces any lesion. The work of Dr. Pancoast with the roentgen ray is one of the most valuable contributions to the question of pulmonary radiology. The roentgen ray will never make an etiological diagnosis of tuberculosis; will never prove that the early changes are due to one of any number of different causes. In the study of pneumoconiosis alone I feel that the development of roentgenology has been distinctly well worth while. In this disease the roentgen-ray plates to the casual observer would seem to show tuberculosis, but the experienced man in roentgenology will know that he has not tuberculosis to deal with.

The stout man shown on the screen was under my care six years ago and weighed 130 pounds. Some time later a lesion appeared on the left side, coming well down. Despite my advice against his return to his occupation, he went back, remained well and his weight ran up to 208 pounds. He has been working steadily under the same conditions for the last five years. The lesion is apparently completely arrested, the only evidence of it being a fibrosis.

The presence of fibrosis is not surprising when one remembers how tuberculosis is cured. In so far as fibroid tissue develops in the lung, so far will the disease recede. Klotz, in his study of anthracosis, says that one of the characteristic features of the pathology in addition to the fibroid change is the blocking of the capillary lymphatics, making the subjects more susceptible to pneumonia. I think the prevailing opinion among men interested in industrial medicine is that in so far as organic dust is concerned in the production of disease of the lungs per se it may be disregarded. The slides shown tonight emphasize the large influence of the diaphragm in respiration. While this is well known, little mention is made of it in the textbooks. We have been taught that the dyspnea of tuberculosis is due to involvement of a large amount of lung tissue. I have learned that the dyspnea may be present without such involvement. Men will say that the death rate in tobacco workers leads all others. We know, however, that cigars cannot be made except in a damp condition. It is an extraordinary thing that some of the dust causing damage does not do so except after many years of exposure. None of the cement workers who had been in the work for fifteen years showed marked evidence of its effect. There was slight evidence of pneumoconiosis but hardly any evidence of fibrosis. I hope the time has come when the dust fetish will be considered in its proper proportions. Our studies also proved the ease with which the protection of workers in these industries is possible. If they are roentgen rayed once a year the advance of the disease is noted and checked by withdrawal from exposure to the irritation.

Dr. William M. L. Coplin: I am particularly interested in the contention that the organic dusts are harmless. Recently Dr. Jackson has had forced on him the fact that if a peanut become lodged in the pulmonary tissue of a child death ensues in a short time; whereas, a foreign body of metal may do little harm for years. Within a few hours organic foreign material induces a severe inflammatory reaction in the bronchi, giving rise to a very definite picture; at first an edematous bronchitis and, later, more or less marked induration and peribronchial infiltration. Vegetable protein introduced into the lung produces an intense reaction out of all proportion to that brought about by any other alien body not definitely corrosive or destructive, as chlorin, taken into the bronchi. It is hard for me to believe that the introduction of organic matter through the pulmonary system exerts no deleterious influence on the tissue. Most organic bodies, for example, catgut, must be metalized (chromicized), otherwise the tissues attack them; often, though treated with chromium, absorption (which means tissue reaction) eventually occurs. Metal of a noncorrosive nature (gold, platinum, silver) and possibly organic material (catgut) when metalized may establish a fibrosis resembling that to which Dr. Landis has referred. With our knowledge of the changes shown by the roentgen ray caused by inorganic substances, I should be very much surprised if we could ignore this type of dust.

Dr. David Riesman: The work done by Drs. Miller, Smyth and Landis is very interesting. It is exceedingly important that we know the truth; if dust is harmless we should know it, and yet, it would be a very unwise thing if the city administration should become imbued with that idea and should cease effort to get rid of it in the summer. Dust may be harmless but it is very undesirable. It is reasonable to assume that when mixed with bacteria the dust may carry them into the lungs. Moreover, it is probable that if we inhale street dust constantly we tire the cilia of the respiratory tract and choke the lymphatic glands at the hilus of the lung so that they cease to be good reservoirs or graveyards for bacteria which then either stay in the lung or pass through the glands unchecked. I take it also that there is a connection between irritating dust and coryza, not that the dust per se causes the coryza, but that it predisposes the nose to the localization of bacteria. Dr. Landis said that the cigar industry stands high in the tuberculosis column. I have heard such a statement before and I should like to know Dr. Landis' explanation. I would also ask Dr. Landis' opinion regarding woolsorters' disease, which is an inhalation disease—pulmonary anthrax. The position of the silk industry at the bottom of the list in the dust column is accounted for by the fact that it is a moist industry, as the factories make use of humidifiers to keep the silk pliable. Finally, I ought to mention an interesting historical fact, so far not referred to by writers on industrial diseases, that Paracelsus early in the sixteenth century wrote a work on the dangers of the mining and metal industries.

Dr. Landis: In reply to Dr. Riesman's question regarding the high death rate attributed to the cigar industry, I may say that a year ago last summer I had under my care at White Haven from several counties in the northern part of New Jersey twenty or twenty-five young women between the ages of 18 and 24, all of whom gave the history of being cigar makers, and all of whom came from small manufacturing towns about Perth Amboy. Examination of the cigar factory showed it to be beautifully lighted, up to date in every respect, and absolutely free of dust. Investigation of the living conditions of the girls showed these to be most unsanitary. The health appropriation for the towns was totally inadequate and largely absorbed by office expenses. The girls received low wages and lived under bad sanitary conditions. This, I think, is a very logical explanation of the high death rate from tuberculosis charged to dust in many of these industries. I do not, of course, think there should be any diminution in our effort to do away with the dust in manufactories. I believe it acts as a carrier in many of the infections of the respiratory tract. Investigation is welcomed by the manufacturers. Five years after I did the first work of this kind I received a letter from one of the pottery companies telling me of their improvements instituted to eliminate the dust, and stating that they had found they had been wasting, in the dust, materials which had a money value, to say nothing of improvement in the health of their workers.

Dr. Miller, closing: I would emphasize Dr. Landis' remarks concerning cigar workers. I know of only two thorough investigations which have been made of the health conditions, as contrasted with the mortality diagnoses, of cigar workers in this country. One was made by Dr. Dembo of the New York State Factory Investigating Commission, who found in 600 only slightly more than 1 per cent. to have what she believed to be tuberculosis of the lungs. During the last year I have examined 400 such workers and my deduction was that only five had active pulmonary tuberculosis, and of these I was not entirely certain. Thus, in the 1,000 the rate was about 1.3 per cent. The workers whom I examined were in the better factories, mostly young girls and well paid, receiving from $10 to $20 a week. Subsequently I went into forty or fifty smaller and less hygienic factories in Philadelphia and here I am sure the percentage would have been higher because of poor hygiene and smaller wages with consequent poor living conditions. With Dr. Landis I believe these factors are responsible for the high tuberculosis mortality.

A Case of Estivo-Autumnal Malaria Lacking the Typical Symptoms of this Disease, by Dr. David Riesman and Dr. R. D. Spencer. Dr. Spencer: The patient was admitted to the Philadelphia Hospital on Nov. 29, 1917. His chief complaints were pain in the lower left chest, shortness of breath and generalized itching. His present illness began in

July, 1917, while in Rabat, Morocco, with a dull pain over the left side, gradually growing worse and radiating to the lumbar and lower left abdominal regions. He entered a hospital in Tangiers and there developed a mastitis of the left breast and seven days later a similar condition in the right breast. Important physical findings in the case were a large palpable mass in the left hypochondrium, dulness at the base of the left lung, at which point the patient states that he was aspirated in the Tangiers hospital; a diffuse copper-colored papular eruption, causing the severe itching, pronounced pallor of skin and mucous membranes, and scattered and indistinct râles over the left lung. The interesting findings in the blood examination were the crescents and intracellular pigmented forms of estivo-autumnal malaria, and leukocytes containing melanin. Fluoroscopic examination showed the enlargement in the left hypochondrium to be the spleen.

The case is of interest because of its differentiation in symptomatology from the usual type of malignant tertian malaria. The history of one chill in 1914 and of five days' sickness in 1915 with the onset of the present pain of the left side in 1917 is distinctly not the usual course of symptoms of the disease. That the sulphur treatment given for the skin condition was not curative with the fact that no burrows were observed suggests that the skin lesion might represent one of the eruptions of masked malaria. The shortness of breath was probably due to the man's pronounced anemia. Explanation of the double mastitis is difficult. It might have been due to cysts formed by the filaria volvulus which form tumorlike masses in the lymphatics. The adults are rarely found in the blood. The fact that this parasite is confined largely to the western coast of Africa and that only two of these tumorlike masses were found does not render this explanation very probable.

Report of a Case of Pulmonary Gangrene Following Operations for Strangulated Hernia, by Dr. David Riesman and Dr. P. L. Cook. Dr. Cook: The patient was a man, aged 54 years, a gardener, who had had a right inguinal hernia for twelve years; also complained of dry cough for two years. He reports that in October last he was operated on under ether anesthesia for strangulated hernia. He did well for two days, when he was seized with a cough and began to have an extremely offensive taste in the mouth. There was neither pain, fever, nor sweats. He spat great quantities of offensive material but no blood at any time, and grew increasingly short of breath. He was admitted to our service in the Philadelphia Hospital on Nov. 12, 1917, about two weeks after operation. The man was very toxic in appearance. Microscopically the sputum showed a great variety and profusion of organisms but no tubercle bacilli. A major diagnosis was made of pulmonary gangrene following herniotomy, probably dependent on the formation of a thrombus, or lodgment of an embolus in a branch of the pulmonary artery. Death supervened before the suggested surgical procedures could be instituted. Thrombosis of the pulmonary, according to Osler, is rare. Other writers do not distinguish it clinically from embolism, which is typically associated with chill, fever, pain and hemoptysis, all of which were absent in this case. DaCosta's reference to embolism as a possible etiologic factor in some postoperative pneumonias is suggestive in this connection. The incidence of pulmonary embolism following major operation was 0.0046 in a series of 3,657 cases at the Mayo Clinic, although DaCosta refers to a series of 1,140 cases in which it occurred twenty-three times. In the surgical clinic it is seen most frequently after thrombosis of peripheral veins. Without this factor it occurs most often following operation for appendicitis, strangulated hernia, and myoma of the uterus. DaCosta mentions 17 instances in which immediate operation was undertaken for removal of the embolus with death in every case. The mortality of operation for pulmonary gangrene from all causes is about 30 per cent. In the present case autopsy showed a thrombus partially occluding the vessel in a branch of the pulmonary artery.

PITTSBURGH ACADEMY OF MEDICINE

Meeting of February 5

Obstetrical Superstitions. Dr. Paul Titus: It occurred to me recently that I had heard quite a few obstetrical superstitions, that belief in them is quite widespread, and I decided to jot them down as I heard them. In a comparatively short time I had acquired a list of ninety-seven and I am sure there are many more that I have missed. I have tried to group these to a certain extent according to a similarity of origin and I propose to read them over to you for a double purpose. It is interesting to note how well founded on facts some few of them are while others are actually survivals of the combination of medicine and folk-lore taught by the ancients, and both the good ones and the foolish ones are amusing.

If you will permit me to consider the subject of menstruation under the heading of obstetrics, inappropriate as it may seem, the first superstition I have to present is that "a menstruating woman is unclean; if she touches a mare which is with foal, the mare will miscarry; she must not handle milk or it will turn sour; she will be unsuccessful in making jelly for if she attempts it the syrup will not solidify," to which may be added the belief that "if a woman has no children she is likely to have an early menopause."

Coming to the subject of pregnancy proper, there are a multitude of ideas covering the various ailments of pregnancy, "after the skin grows on the baby the nausea will stop," "popcorn is good for nausea of pregnancy," "the husband sometimes has the nausea of pregnancy for the mother." As an additional bit of evidence that the husband counts for something in obstetrics I would cite the fact that "the husband getting toothache is considered to be a sign of pregnancy, and one may count from this date in estimating the expected time of confinement." "Heartburn makes hair on the baby," or to express it a little bit more clearly, "heartburn means that the baby is going to have a great deal of hair" and to cure it, I hope without causing that same hair to fall out, it is recommended that "for heartburn one must eat raw potatoes." "Getting the feet wet will cause polyhydramnios," the relation here being perfectly obvious. "The head of the baby sinks into the pelvis in the dark of the moon" but "if the patient has gone overtime this can be remedied by dropping new pennies on the floor." As a means of determining about when to call the doctor you have your choice between "the occurrence of wild pains indicates that the baby will be born two weeks later to the day," and "if the baby does not come on the exact date calculating from the last period it will be precisely two weeks late." Of course you have all heard a pseudocyesis called a "wind-baby" and, incidentally, this is one of the superstitions I believe in.

If a young couple desire to arrange beforehand to have either a boy or a girl, as their fancy dictates they have only to follow these directions: "In order to beget a boy the father must go to bed with his boots on," or "if a boy is desired coitus should take place before the period but if a girl it should occur after the period," or "have coitus on the left side to beget a girl, on the right to beget a boy," or the "mother should eat freely of peanuts during her pregnancy in order to have a boy, whereas if she wishes a girl she should eat a great deal of sweet stuffs of all kinds." It is said that "the right ovary produces a boy, the left a girl." But should they have any doubt they will be able to tell absolutely which to expect by the fact that "if a patient has a high color she may expect a girl," whereas "if the unborn baby is a girl the patient will be more nauseated than if it is a boy." If the fetal heart sounds are above 140 one may expect a girl; if below, a boy, because of the fact that a woman's pulse is faster than a man's, this having been applied to male and female fetuses" and "if a baby is carried high in front it is a boy, but it is a girl if carried low and the patient is broad in the back" and anyway "more boys than girls are born in war times."

The question of maternal impressions and markings of the unborn baby is hopeless. The further one goes, the deeper into the subject one gets. Suffice it to say that all sorts of things from black cats crossing one's path to eating strawberries and watching workmen either fall from scaffoldings or stagger home drunk, will mark the baby in various ways. This is all so definite, in fact, that one never need be at a loss to account for any peculiar markings or malformation the newly born baby may show. If the mother, preferably with the help of one or both grandmothers, will merely think back over the nine months of pregnancy the explanation is sure to be found. There are one or two things in the way of maternal impressions that should be avoided during pregnancy. "If the patient raise her arms above her head for any reason the cord will be twisted around the baby's neck" and "stooping to go through a fence will also loop the cord around the baby's neck." To have the cord around the neck is usually a very serious thing as you know! "The mother must not touch her face, as a habit, or the baby will be marked on the face." "If the baby sticks out its tongue after its birth it means that the mother intensely desired some article of food during pregnancy. If some of this is put on the tongue this habit will cease."

It is very nice for you to give your patients a favorable prognosis as to the character of their labor and this you may do if you will remember that "if a woman has a large mouth she will have an easy labor, but if the mouth is small a difficult labor." It is well known that the "change of the moon starts pregnant women into labor" and of course "more babies are born at night than in the day time," due to the fact that the moon, which ordinarily shines at night, is responsible.

It is said "oil rubbed on the abdomen makes labor easier" and a superstition extant among the negroes to the effect that "intercourse at the beginning of labor will make a light labor" has caused at least one fatal infection that I know of. "Girls make more trouble during labor than boys" and "the breath must not be drawn in during labor as that draws the baby back" and "one should blow in a bottle to expel the after-birth if retained" speak for themselves. "The patient must keep her mouth shut after delivery to prevent the womb from dilating" but if it does and hemorrhage results "one should put an ax under the bed, edge up in order to cut the hemorrhage." "For convulsions tie pieces of fresh onion over the radial artery" and so far as twins are concerned, "it is bad luck for a mother to have boy and girl twins because the mother in all likelihood will not survive."

After the patient has had her baby you must remember that "sheets must have been slept in in order to take off the chill before the bed is occupied by a puerperal woman" and "an abdominal binder preserves the figure after delivery." "If the mother does not sleep after delivery put her shoes under the bed toes out." If the patient complains of after-pains you can comfort her by pronouncing the dictum "the more babies the more after-pains" and so far as that is concerned "for every child a tooth." "Eating fish during the puerperium will cause flooding," but anyway "the patient must bleed forty days after delivery for purification."

"A patient must not have her hair combed while in bed after her baby has come because this causes brain trouble." The ninth and tenth days of the puerperium are troublesome ones because "the uterus drops back the ninth day" and "the bones go back with a click on the ninth day" and although it is considered by those who believe in this superstition that it may be perfectly proper to get up on the fourth or fifth day one absolutely must be in bed on the ninth day. "Milk-leg occurs on the tenth day" and "a patient must on no account get up for the first time on Sunday."

The care of the breasts in nursing the baby has a series of ideas connected with it, chief of which are that "there are nine days of sore nipples," breast engorgement is called "the weed," "if one catches cold and it settles in the breasts one will get a bealed breast," "the mother's intestinal gas is transmitted to the baby through the milk," "tomatoes are acid and should not be eaten by a nursing mother," "acid food taken by the mother sours the milk," "the mother must never drink water while nursing the baby because it will strangle the child," "she should not take hold of cold scissors or any other sharp cold instrument because the milk will be chilled" and "ice-cream freezes the milk."

Where the grandmothers and midwives shine and folk-lore runs riot is in the care of the young baby. "Burnt gauze dressing is applied to the cord," which really is not bad as a sterile dressing. I might remark here that it is an old custom among the Japanese to burn a piece of rice paper on which a prayer has been written and apply the ashes to the cord stump. "Give the baby a teaspoonful of water immediately after birth and it will never have colic," and do not worry if the baby does get thin because "a baby loses weight as long as the cord remains attached." "If a new-born baby has a surface likely to be exposed to friction moisten with the mother's saliva and it will not chafe." This superstition is offered for what it is worth to the pediatrists here as well as that "a boy crying will rupture himself." We all know that "light hurts a baby's eyes," although it does seem reasonable to suppose that they would close their eyelids if it did. Speaking of eyes, some babies get sore and discharging eyes, so, if you want to prevent that, "wash the baby's eyes with urine." If that fails "breast-milk is put in sore eyes" and it will positively cure them.

Both boy and girl babies occasionally have engorged breasts with secretion and, because there is no especial reason for it, it is supposed to have been caused by a witch and therefore rightly called witch's milk.

"If a female child's tongue is tied it need not be touched" for obvious reasons. "If the baby wrinkles its forehead and rolls its eyes upward, it is a sign of weak-mindedness" and "babies must be picked up else they will become liver-grown." "If a child has convulsions keep its hands open because if the hands become firmly clenched the child will not relax and will die" or "salt the palms of the hands of a child with convulsions." "Tie up a baby's hands because it gives him a sense of security."

Watch carefully so that "if a baby yawns you may make the sign of the cross over its mouth in order to prevent the devil from jumping down its throat," while you must always say "gesundheit or God bless it when the baby sneezes, because at this time its soul leaves its body for a moment."

The idea that "a baby should be taken up-stairs with a gold-piece in its hand, before being taken down, so that it will rise in the world" and that "a child's finger and toe-nails should be bitten off instead of clipped for the first year so that it will not become a thief" should be carefully observed because of their profound influence on the child's later life. I commend to the pediatrists as being much simpler than fussy formulas in cases of malnutrition the fact that if you "measure such a child and repeat a doggerel, each part measured grows; tie knots in the string used for making the measurements and throw it away."

The natural result of all this knowledge with the evil results that must follow any lack of such knowledge is that obstetrics has become a specialty! I defy anyone to attempt to know all these vital facts which I have outlined unless he gives the subject his undivided attention. Even then he possibly may not do at all because "it is most unlucky to have a left-handed doctor in attendance on you during confinement."

I hope that none will think that I have gone to all the trouble of collecting these foolish ideas just to produce a laugh. The lesson that I have gained from it all is that women are unduly impressionable, or at least about obstetrical affairs. When you consider that obstetrics forms one of the main topics of conversation at Red Cross meetings and at bridge parties, you will understand how such a multitude of fanciful ideas has sprung up and can be kept in existence. Many of these things are firmly believed and while only a few of them are likely to cause actual physical harm to a pregnant woman, the mental impression on her is most pernicious. Some few women seem to take peculiar delight in telling all the horrible obstetrical things they can think of to their pregnant friends, and the doctor is constantly called on to combat the fears that thereby arise.

Recently a patient of mine neglected her teeth to such an extent that she developed a pyorrhea which was followed by a pyelonephritis. Nothing that I could say could convince her that it was safe to have dental work done during her pregnancy.

Mental disturbances of pregnancy and the puerperium are dreaded complications. The less the pregnant woman thinks about herself the better. It is a physiological process, not to be shrouded in mystery and surrounded by superstitious ideas, and it is my opinion that if the physician is more or less familiar with some of these things which I have outlined he is better able to allay the fears and explain away the doubts which these old-wives' tales produce.

Dr. H. A. Miller, in discussing: It is important that the physician should be versed in obstetrical superstitions in order that he may be in position to deny them and assist the patient. The psychoses of pregnancy are influenced by superstitions, especially those due to concealed dementia praecox.

Frederick B. Utley, Reporter.

PITTSBURGH OPHTHALMOLOGICAL SOCIETY

Meeting of February 4

Vice President Dr. Edward Stieren in the chair

Dr. J. Floyd Murdock presented for study and suggestions as to treatment Albert H., aged 13, schoolboy. The labor at his birth was long and difficult, forceps having been used. The mother noticed shortly afterward a marked drooping of the left upper eyelid, which has remained unchanged until the present time. Inspection shows a slight facial asymmetry, complete ptosis of the left upper lid and a small depressed scar over the left parietal region; the eye seems to be slightly proptosed. There is a paralytic convergent strabismus, abduction each eye being nil, and the rotation upward and downward greatly impaired. The pupillary reactions are normal. The ophthalmoscopic examination shows in each eye a moderate refractive error but no organic lesion. Vision without correction is O. D. 20/40, O. S. 20/70.

Dr. Adolph Krebs, in discussing, stated that as there is no manifest diplopia, operative interference with the strabismus was inadvisable as an approximation of the images might produce a very troublesome diplopia, the fusion sense being undeveloped.

Dr. Stieren suggested a plastic procedure for the correction of the ptosis, for cosmetic effect, that of Panas being mentioned as particularly applicable in this case.

Dr. S. A. Sturm presented W. C. M., aged 28, electrician. In December, 1916, his lumbar region came in contact with a wire carrying 2200 volts. He was unconscious for five or six minutes, was slightly burned, but returned to work in two or three days. In January, 1917, the back of his neck came in contact with a wire carrying 500 volts. He was unconscious at this time for only one minute and was not burned. Within a month he first noticed a gradual diminution of the visual acuity, more marked in os, which has progressed until at present he has light perception only in each eye. The patient is positive that prior to January, 1917, his vision was good. He does not admit venereal infection, although his wife has never been pregnant. The patellar reflexes are absent; station is decidedly unstable, gait ataxic; coordination of upper extremities is good. The pupillary reactions are normal and the ophthalmoscopic examination shows each nerve head to be atrophic, of a dirty grayish-white color and the arteries somewhat contracted.

The members present were of the opinion that the optic atrophy was primary and advised the securing of a Wassermann test.

Dr. E. E. Wible reported the case of Mrs. B. C., aged 29 years, housewife. She has had three children of whom one is living. Family history is negative as to cancer, "tumor," etc. Present weight is 115 pounds; maximum weight three years ago, 145 pounds. Present trouble began about two years ago at which time she developed violent cephalalgia in the region of the left vertex, recurring at intervals of a week or more. The attacks have gradually increased in frequency and severity. Two weeks before consulting Dr. Wible exophthalmos began to develop in the left side and when first seen the eyeball was almost entirely proptosed, downward and outward, the conjunctiva chemotic and the cornea sloughing, the entire mass being about the size of a lemon. A hard mass, firmly fixed, was found protruding from the orbit up and inward and a clinical diagnosis of sarcoma was made. An exenteration of the orbit was advised and was performed the following day, Jan. 18, 1918. The post-operative history of the case has been uneventful to date. The pathologic report was "a rhabdomyoma," which is extremely rare in this locality, but very few cases having been reported in the literature.

Dr. Edward Stieren reported the case of H. W. B., aged 45 years, who came Aug. 27, 1917, with a huge cauliflower growth of the right bulbus. Arising over the external rectus by a strong pedicle, it took on a mushroom shape, 12 mm. in length, 8 mm. in width and about 10 mm. high. It extended from the external canthus, overlapped the cornea to its center and projected forward between the lids, which could not be closed over it. The surrounding conjunctiva was inflamed and thickened, and there was considerable ropy discharge. The color and general appearance of the mass was that of a pale red raspberry. There was no involvement of the pre-auricular or any of the lymphatic glands.

According to the patient's statement the trouble began about a year ago as a localized inflammation with a slight elevation. He has a lesion above the right ear which has been diagnosed as "skin cancer" and for which radium exposures are being used with good results. Under local anesthesia the growth was removed at the South Side Hospital, Aug. 29, 1917. Two parallel, horizontal incisions were made about 3 mm. above and below the growth, extending from the limbus to the external canthus, and the conjunctiva between, including the subconjunctival tissue and the growth, dissected off. At only one point, over the insertion of the external rectus, was the growth attached to the sclera. Four vertical incisions were then made, two upward, from the ends of the upper horizontal incision, and two similar ones downward, the upper and lower flaps of conjunctiva dissected loose and sutured over the defect. There was no involvement of the cornea, not even a haziness of its epithelium.

Healing was prompt and uneventful, the sutures being removed on the fifth day. The specimen was examined by Dr. Jacob Rockman, who pronounced it an epithelioma of papillomatous type.

Appreciating that recurrence of epitheliomata after local removal is common; roentgen-ray exposures to the site were urged and accepted. He was accordingly rayed by Dr. C. N. Schaeffer, nine exposures of from one to two milliamperes, in two to four minute seances, being given at intervals from Sept. 4, 1917, to Oct. 27, 1917.

He was last seen the early part of this year. The conjunctiva is pale, smooth and glistening and is on tension only when patient looks strongly to the left, but there is no limitation of excursion.

Vision in each eye is 6/5.

H. H. Turner, Reporter.

WILLS HOSPITAL OPHTHALMIC SOCIETY

Meeting of Feb. 5, 1918

Dr. P. N. K. Schwenk reported two cases of panophthalmitis with recovery following cataract extraction. The first case, a woman aged 72, underwent a combined lens extraction at her home, Nov. 21, 1917. Patient made an uneventful recovery, but there remained an opaque piece of capsule in the pupillary area. About a month later, a capsulotomy was performed, followed in twenty-four hours by severe pain, nausea and edema of the bulbar and tarsal conjunctiva. The cornea was indurated at site of limbal puncture. Two days later, the anterior chamber was two thirds full of a purulent exudation and the cornea was steamy. A 25 per cent. solution of argyrol was instilled three times a day, atropin four times a day, and the eye was frequently cleansed with boric solution. Externally, to the lids, a warm 50 per cent. solution of magnesium sulphate was applied for fifteen minutes every two hours, for six weeks. Internally, 2 grains quinin were administered four times daily. At the end of three weeks the corneal induration began to subside and the hypopyon had nearly disappeared. At the end of the sixth week, the sclera was white and the cornea clear except for a minute scar at site of former puncture. Today there remains some organized lymph in one portion of the pupillary area, but the corrected vision is 6/30. Dr. Schwenk said that he had never seen such a violent inflammation followed by retention of the normal shape of the globe. The second case, a woman aged 82, underwent a combined lens extraction on Nov. 16, 1917. Two days later the wound was healing nicely, the anterior chamber had reformed, and there was but slight reaction. Four days later, the aqueous was hazy, there was a small hypopyon and more pronounced reaction. The case was then treated in a similar manner to the one above mentioned. Nine days later the aqueous was clearing up. The pupillary coloboma space was filled with a whitish exudate. Ten days later this exudate was absorbing. Eleven days later the eye was entirely quiet and a capsulotomy was done. The following week numerous vitreous exudates and a faint fundus reflex were seen. Two weeks later corrected vision was 6/30 and the patient was discharged.

Dr. Zentmayer, in discussion, said he thought that the cases reported by Dr. Schwenk should not be classed as panophthalmitis, but rather as wound infection with iridocyclitis. Personally, he had no faith in argyrol in these conditions, and lately, in two cases of wound infection, he had used subconjunctival (intra-orbital) injections of cyanid of mercury (1:3,000), and had attributed the very satisfactory end result to this method of treatment. Possibly less radical methods would have proved as effective.

Dr. McCluney Radcliffe presented a case of panophthalmitis following cataract extraction, caused by tooth infection. He had performed a combined operation and recovery proceeded in a normal manner until the seventh day, when symptoms of infection were first noticed. (Before the operation was undertaken, a negative smear had been made from the contents of the conjunctival culdesac.) With the onset of symptoms of infection, the usual treatment was instituted without effect, and it was finally discovered that there was an infected tooth on the same side. A roentgen ray was taken and showed a diseased root. The tooth was then extracted. There was a large cavity in the lower portion of the crown and the root showed necrotic changes, but there was no abscess. The eye now shows a condition of phthisis bulbi, and will have to be enucleated. Dr. Radcliffe thought that the onset of the disease seven days after the operation, when the anterior chamber was thoroughly closed, strongly indicated that the infection was of endogenous origin.

Dr. Zentmayer, in discussion, said that he did not recall in literature a case of panophthalmitis attributed to focal infection. Most of the cases were uveitis. There were, however, several cases, similar to the one reported by Dr. Radcliffe, in which infection following operation had been attributed to oral sepsis.

Dr. Posey said that he thought Dr. Radcliffe's conjecture regarding the origin of the infection was doubtless correct. He thought, however, that ocular infection from dental cause was exaggerated. He had recently been compelled to operate on a case with marked pyorrhea and had never had better results.

Dr. William Campbell Posey reported a case of corneal haze in a miner. The haze, which was limited to the pupillary areas of both eyes, consisted of a grayish-white stippling of the anterior layers of the cornea, apparently due to a hyaline change. The remaining portions of the cornea were clear; vision equaled 5/15 in each eye. The patient was a laborer and had worked for thirty years at the openings of shafts, where he was subjected to violent drafts. The ocular changes here seen were probably caused by the action of air laden with small irritating particles of dust. Dr. Posey referred to an article written by Nettleship some years ago, in which that author referred to a number of cases of dimness of vision resulting from a haze of the corneal epithelium, occasioned by a high wind. He said that he had recently seen a similar case in his own practice in which a break in the epithelium, caused by the lodgment of a foreign body, was surrounded by a peculiar haze of the epithelium which was elevated as though infiltrated with oil droplets. This condition of affairs subsided in twelve hours.

In discussing, Dr. Zentmayer asked Dr. Posey how he explained the limitation of the opacity to the center of the cornea. In most similar conditions the opacity was zonular.

Dr. Schwenk stated that he considered Dr. Posey's conclusion, that the corneal irritation was caused by wind laden with foreign matter, was quite reasonable.

Dr. Posey showed a child who had suffered a perforating wound of the limbus. The iris had been prolapsed and the lens injured. As the patient did not report at the hospital until forty-eight hours after the injury had occurred, he treated the case expectantly, especially as there was some discharge from the conjunctiva. He thought it a mistake in cases of this kind to open up the wound after it had been once partially closed over with epithelium, on account of the danger of wound infection. As in this case, he preferred to wait until the inflammatory reaction and the conjunctival irritation had subsided. In this case he closed the wound by dissecting the conjunctiva from the ectasic area, and slipping the same underneath the undermined conjunctiva below the wound, just as is done in the McReynolds pterygium operation. Such a procedure closes the wound, makes tension on it and produces a flat scar.

Dr. Posey exhibited a case of a young girl, from whom he had recently removed an adenoma of the orbit. The cosmetic results were almost perfect, a slight dropping of the lower lid and a very fine scar over the outer marginal rim remaining. But three weeks had elapsed since the operation.

In discussion Dr. Zentmayer said that he thought Dr. Posey had more than cured the exophthalmus and that there was now a slight enophthalmus. The result, however, he considered excellent.

Harold W. How, Secretary.

COUNTY SOCIETY REPORTS

BLAIR—FEBRUARY

The Blair County Society met February 26 at Caum's Cafe, Dr. H. J. Sommer presiding and twenty-seven members present. Lieut. Ernest Hoover, home on a short furlough, gave an interesting talk on his experience in army camps, how the army doctor's work is performed and the contrast with methods employed by practitioners in civilian communities. Following the luncheon a round table session was held. Many interesting cases were presented and discussed by those present. One case in particular, Dr. Walton's, proved very interesting. The case (patient present) was a tracheotomy done to relieve an obstruction in the larynx. The patient still wears the tube and from all indications will make a recovery. Plans for an address soon by a state hospital representative are being made by society officers.

C. W. Burket, Reporter.

HUNTINGDON—MARCH

The Huntingdon County Society met in the Huntingdon Club rooms, March 14, at 1:30, with ten members present and the following members of the dental profession as guests: Drs. Roy Black, Newlin, Ralph Wilson, Hunter, and C. V. Mierly.

Dr. Black read a paper on "Dental Infections." He spoke of the systemic disturbances produced by pathologic teeth as not being new. Flagg records in 1878 varieties of trifacial neuralgia, pains in remote parts of the body, grave functional disorders of the eye and ear and motor disturbances, epilepsy and paralysis having direct connection with hypercementosis and other dental lesions. The more general use of the roentgen ray has brought the matter out more emphatically. No disease of the nervous system or alimentary tract should be diagnosed without eliminating the teeth as a possible factor. There are two classes of dental infections: infected area around the teeth, as pyorrhea; and apical or alveolar abscess. The first is a constant source of supply of toxic substance and must be overcome before it can be set aside as a possible factor in any systemic disturbance. Not all cases can be cured but all can be helped. All can be prevented if daily mouth hygiene is followed. The second class has its acute and chronic abscesses; the acute cases are amenable to treatment but the chronic ones are more difficult. The abscess breaks down the surrounding tissue which is carried into remote parts of the body. Every tooth having a blind abscess should not be extracted. Dr. Black reported eleven cases, showing same organism in infected gums and appendix; same germ in ulcer of stomach and duodenum and infected gums; germs from infected ulcer of tooth injected into rabbits gave hemorrhages and ulcer of the stomach same as in the case from which they were taken; osteomyelitic operated on many times experienced relief when diseased teeth and bony tissue of jaw were removed; a paretic who had his mouth cleaned of diseased teeth resumed his normal condition; woman with insomnia improved rapidly on removal of diseased teeth; rheumatic had his teeth extracted with no relief; a partial blindness not helped by removal of apical abscessed teeth; rheumatic pains ceased within two days after removal of teeth for artificial teeth; arthritic recovered after extraction of one bad tooth; a focal infection was thought to be due to bad teeth, but when an antral infection was cleared up the remote infection also cleared up; so, there are many cases pro and con. A middle ground can be reached by cooperation of the medical and dental professions.

Dr. Newlin read a paper on "Roentgenology in Dentistry." The roentgen ray gives you a positive diagnosis or nothing at all. There must be a good machine and operator, and plates are to be preferred to films, as you may find approximating conditions. Roentgenology has helped in neuralgias of unknown cause, broken off roots (inferior maxillary and posteriorly), contraction of masseter from septicemia, delayed eruption, extensive bridge work as to devitalization, cases of pyorrhea, cases of rheumatism. Cases were reported showing a hidden permanent bicuspid; overlooked molars causing chronic but not painful ulcer under a plate for eight years, and saving a prosecution; impacted tooth. The orthodontist has a broad field in roentgen-ray work. Dr. Newlin urged all to advise the use of the roentgen ray where there is any doubt after thorough examination has failed to make a positive diagnosis.

The papers were thoroughly discussed and many questions asked of our dental brethren which they answered. J. M. Keichline, Jr., Reporter.

PHILADELPHIA—JANUARY

The Philadelphia County Society met January 23, at 8:30 p. m., President Hammond in the chair. A symposium on Goiter was presented.

A paper on "The Pathology of Goiter" was read by Dr. A. G. Ellis. A few general points on the pathology were considered. Diagnosis and treatment are based on the size of the goiter and the evidence of perversion of thyroid function rather than on the exact pathology of the individual gland. In other words, size, contour, density, and movability of the goitrous thyroid do not give trustworthy information regarding histology. Clinicians with large experience report that the symptoms are indicative of the structure of the thyroid. The Mayo Clinic apparently reaches the greatest accuracy in this respect. McCarrison, however, claims that Graves' disease may exist with any form of goiter, and many others believe that this affection has no specific histology of the thyroid. The point to be remembered is that those whose experience includes dozens or scores of cases should be careful in their criticism of conclusions based on hundreds or thousands of specimens. My limited study of goitrous thyroids has not led me to believe that the pathological anatomy is easily predicated from the clinical symptoms. This refers especially to the exophthalmic goiter, which has the most striking symptomatology. If we drop the idea that each symptom-complex in goiter has its specific thyroid structure, our findings will not be so disquieting. The nomenclature of the histology of goiter is varied and confusing.

Clinically, goiters may be divided into the nontoxic and the toxic. Those of the first group are of chief importance from the standpoint of influence on neighboring structures. They are termed simple or endemic goiter and include parenchymatous, colloid, cystic, and some of the adenomatous goiters. These types are possibly very largely but different periods in a chronic process marked by atrophy of essential cells and lessened function. Treatment is based on symptomatology and rules regarding the handling of local tissue overgrowths of all types apply here. Differentiation from true malignant tumors of the thyroid is sometimes difficult. Chief among the toxic goiters is the exophthalmic form with its well-known but not always constant symptom-complex. The clinical features rather than the microscopic picture of the removed thyroid must be the deciding point in the classification of this type of thyroid. Some of the adenomatous goiters belong to the toxic group. The character of the colloid content determines the toxicity of the goiter. The point of emphasis is that treatment of the individual case of goiter is guided primarily by the local or systemic accompaniments, and secondarily by the fact that there is present a colloid, cystic, adenomatous, or hyperplastic thyroid. There should be, however, as accurate information as possible regarding the structure of diseased thyroids and a correlation of clinical findings with the pathology of every removed goiter in the endeavor to determine the changes in the gland producing certain symptoms. Such knowledge may be an aid in diagnosis and treatment, and a step toward the elucidation of the cause of goiter. Regarding etiology, McCarrison believes that endemic goiter is an infection, the organisms reaching the alimentary tract through infected soil, water and food. Animal experimentation seems to substantiate his views. Exophthalmic goiter is also believed to be of infectious origin, although not so definitely so as the endemic type.

Dr. James M. Anders read a paper on "Goiter from the Standpoint of the Internist." In the discussion of goiter the point to be stressed is that really useful information is to be gained from a few recorded cases accurately and thoroughly studied rather than from the many superficially observed. While the principal symptoms of the disease are apparently due to overactivity of the thyroid gland, cases are seen to develop in the course of other toxic conditions. The writer has observed two well-marked instances secondary to rheumatism in which cure was effected by the use of the salicylates. Cases are recorded of luetic origin which have been cured by the antisyphilitic agents. The majority of cases of exophthalmic goiter are probably caused by nervous perturbations, especially in subjects predisposed by neurotic inheritance. Pregnancy and childbirth also have a causative influence, to be followed, however, by diminished function of the thyroid gland after parturition. An intermittent hyperthyroidism of minor degree is that occurring in adolescent girls. It is claimed that this type may occur without alteration in the size of the gland, and these cases usually yield to appropriate measures if the condition is recognized sufficiently early; otherwise, severe toxic symptoms may supervene and persist.

In exophthalmic goiter the degree of enlargement is moderate as a rule, and the right lobe usually more swollen than the left. The "swirring" murmur audible on auscultating the thyroid is highly characteristic when present. It may be absent. In my experience, tenderness, emphasized by Kocher as a finding in this disease, is not invariably present. Exophthalmos, sometimes a late appearing symptom, is a prominent feature, although subject to variations. Among other ocular characteristics are Von Graefe's, Stellwag's and the Kocher-Boston signs. These signs, however, are more or less inconstant, although Von Graefe's is usually present. Muscular tremors, involving especially the hands, are almost constantly present and of much value for diagnosis. The characteristic features of neurasthenia appear in classical cases. Kocher has claimed that leukopenia is an early and important sign. My own experience confirms this opinion in certain cases only. In my complete clinical records of thirty-three private cases of which twenty-seven were females and six males, seven gave a previous history of tonsillitis and six of rheumatism. In one instance goiter developed immediately after an attack of acute tonsillitis and in two during acute rheumatism. One case was distinctly associated with chlorosis. This disease, assigned as a leading cause of hyperthyroidism, in my experience is of little etiologic importance. The family histories of my cases revealed goiter in three cases only. The results of treatment, so far as can be learned, are: Cured, eleven (three as a result of operation); improved, twelve; unimproved, two; died, one.

It is a reproach to our profession that earlier diagnosis of goiter is not made than is at present the rule. In my opinion, the administration of iodin or thyroid extract in dubious cases, with a view to developing the symptoms, if the case be one of incipient Basedow's disease, is quite justifiable. It is a common experience among internists that rudimentary cases often yield to well-directed medical treatment. Those, however, which have reached a marked degree rarely respond to any form of treatment other than surgical. The combined presence of fine muscular tremor of the hands and persistent tachycardia justify a tentative diagnosis of this disease. Not uncommonly exophthalmos, or thyroid enlargement, or both develop, confirming the diagnosis. Persistent tachycardia with marked nervousness should always arouse a strong suspicion of this disease, and the same is true of tachycardia associated with the Boston-Kocher sign. Heart hurry may be the only feature present to be followed soon or late by the other characteristic symptoms of hyperthyroidism. The condition is frequently overlooked because neither exophthalmos nor thyroid enlargement has appeared. These two cardinal features, often late in development, are not uncommonly absent temporarily in fully developed cases of the affection. Rarely either or both of these signs may be permanently absent. From the standpoints of treatment and diagnosis an attempt should be made to distinguish the hypothyroid from the more common hyperthyroid form of goiter. In the former the gland may be slightly enlarged; is soft but not tender; there is no expansile pulsation to palpation, and no "swirring" murmur audible. In this type the body temperature is slightly subnormal, the hands and feet liable to be cold and there is marked sweating on slight exertion. Bradycardia is the rule in hypothyroidism, the pulse rate dropping as low as 40 per minute. In these cases the use of iodin and thyroid extract are required, remedies which invariably tend to aggravate the symptoms of Graves' disease. Hyperthyroidism may merge into a myxedematous condition and it is important to note the development of the signs of atrophy or loss of thyroid function when they supervene. Not only are some of the classical symptoms often missing in hyperthyroidism, but it is also found that degrees of thyrotoxicosis varying from slight evidences of over functioning of the gland to the most profound signs of Basedow's disease, as shown by basal metabolic studies, occur.

Dr. H. A. Hare read a paper on "The Heart in Exophthalmic Goiter." Goiter in the sense of simple enlargement of the thyroid gland is almost symptomless, except from pressure symptoms when the growth is exceedingly large. It is of the utmost importance that we should separate true goiter from exophthalmic goiter, and that we should also practically make a third classification of thyroid disease which might be called the hypothyroid class, because in these instances the gland although it becomes greatly enlarged does so without the development of symptoms indicating parenchymatous change. That is, we meet with considerable enlargement of the thyroid gland in which there is probably some degeneration of its secreting substance and we have hypothyroidism, although hyperthyroidism in the sense of the enlargement of the gland is present. In other words, we have one type of great enlargement of the thyroid gland which is symptomless, except from pressure. We have enlargement so small that it is easily overlooked and yet in which there is so much secretion as to produce symptoms of hyperthyroidism. We have also enlargements of the thyroid gland associated with lack of secretion, hypothyroidism, which class very frequently is overlooked.

In regard to the hyperthyroidism or cases in which there is excessive secretion, so far as the heart is concerned I have been surprised to find that in a considerable proportion of these cases, in addition to the tachycardia we do not have the relaxation of the vascular system. We often find an exceedingly rapid pulse with a very high tension, that is, a pressure of from 160 to 180. I was asked to discuss the action of the heart in exophthalmic goiter, but felt that I ought to decline because I knew so little about it. While we know the results of the administration of thyroid substance, of the definite physiologic action we know very little. In clinical medicine any acute disease with a pulse rate above 120 gives a discouraging outlook, yet exophthalmic goiter cases of rapid pulse go on for years with impunity and often stand forms of stress and strain that are alarming. In regard to the matter of the heart in connection with surgical treatment, it is interesting to note that the surgeon in the end accomplishes that which the physician wishes to accomplish in the first place. The surgical treatment reaps the credit while as a matter of fact the rest cure after operation is largely responsible.

To the three types of hyperthyroidism should be added a fourth in which there is enlargement of the gland with excessive secretion, but in which the interlocking directorate of the other parts of the body compensates. This is seen in pregnancy.

In treatment the rest cure is invariably applicable in the presence of much tachycardia. There is little use in trying to treat an exophthalmic goiter patient who lacks the means of a real rest cure. Therefore, I believe that this type of case is properly sent to the surgeon earlier than the patient who can afford a rest cure. Concerning the action of drugs, I have had little result from digitalis. So far as the pulse is concerned, my best results have been obtained from veratrum viride in 8 to 10 minim doses of the tincture five to six times a day. I am not, however, able to give a scientific explanation for the results secured.

In presenting "The Nonsurgical Treatment of Goiter and Its Complication," Dr. Charles E. deM. Sajous urged that simple goiter should be regarded, in the light of modern knowledge, as the expression of a defensive reaction of the thyroid apparatus he had pointed out fifteen years ago, against one or more poisons, of endogenous or exogenous origin. The pathogenic agent could be either ingested with water in the form of a lime salt, fecal bacteria, etc., or various organisms or toxins originating from the tonsils, dental abscesses, sinus or nasal disease, impacted or retained feces, etc. By penetrating the blood one or more of these poisons could awaken the defensive reaction of the organ. Where the latter was physiologically normal, it did not become enlarged, but when either through heredity, local lesions due to diseases of childhood, etc., its efficiency as a protective structure was reduced to the bare needs of normal catabolic functions, any one of these numerous toxics placed what remains of normal glandular tissue under severe stress, with congestion leading to hyperplasia as main result. If the tissues involved in this hyperplasia, i. e., those remaining in excess of the fibrous or other functionless tissue, are able to carry on the defensive function, no symptoms of hyperthyroidism appear and the condition remains one of pure goiter without systemic disturbance, but if the proportion of hyperplastic tissue exceeds this limit, the secretory activity of the gland is correspondingly increased and symptoms of hyperthyroidia appear, with Graves' disease as an advanced phase. The treatment resolves itself into removing the cause. In true goiter, where pressure symptoms are present or sclerotic changes prevent reduction of the mass, surgical measures may become necessary; but where the growth is purely hyperplastic, elimination of the causative toxic, whether this be tonsillar, peridental, intestinal, water-borne, etc., besides thyroid gland to aid the antitoxic process and relieve the gland of excessive work, excellent results may be obtained. In Graves' disease the same line of treatment with vasoconstrictors and rest, cure may be obtained in all but a very small proportion of cases. Dr. Sajous argued that surgery is resorted to with unwarranted frequency in such cases.

"The Constitutional Disturbance of Toxic Goiter as Influenced by Surgical Therapy" was presented by Dr. Charles H. Frazier: The present status of the surgical therapy of toxic goiter is but a stepping stone in the development of a method of arresting the toxic functional disturbances of the gland. The toxic goiter is brought to our attention in increasing numbers yearly. My experience with the surgical treatment of goiter comprises 268 cases, 185 of which have been of the toxic variety. There have been 237 operations, including 147 lobectomies and forty ligations. Four groups of toxic goiter include: (1) The adolescent type, in which the hypertrophy is so compensatory that evidences of intoxication are trivial and operation is deferred; later, however, this type may become extremely toxic and in young girls from 16 to 19 years of age presents the gravest form encountered. (2) A group met with between the ages of 30 and 40, in which the patient has had an adenoma for years and which has been transformed into a toxic state; the prognosis of surgical therapy here is favorable. (3) A group in which the cases are toxic from the beginning, presenting the picture of exophthalmic goiter. (4) A group including any of the toxic varieties of comparatively long duration; permanent relief here is not to be expected.

Two groups of cases to be carefully analyzed before operation is sanctioned are represented by (1) the patient, a woman with a small adenoma and a group of nervous phenomena; (2) the patient in which the condition is characterized chiefly by tachycardia and but slight enlargement of one lobe. In the first group on the two or three occasions when I have been overpersuaded to operate the outcome has not been gratifying; in the second group in my experience operation has been beneficial in about half of the cases. As a result of the observations by Means, DuBois and others have demonstrated that the rise in basal metabolism indicates the degree of toxicity of the thyroid gland and I am employing this test not only to determine the degree of toxicity as an index of the operative risk and as a guide to treatment, but as a means of determining the ultimate effects of the operation. In our investigations of the thyroid I emphasize the possible relationship of the thymus gland. Clinically some extraordinary results have been reported following a partial thymectomy in hyperthyroidism. In the cases of mildly toxic goiter there are no contraindications to an immediate lobectomy without preliminary ligation. While operation cannot be said to be imperative there is a substantial basis for early operative interference.

In the graver forms of toxic goiter the cases are all hazardous. In the earlier stages of the disease occasionally a lobectomy may be justified as the initial step of treatment; in cases of longer duration, under no circumstances should more than a ligation be attempted. In my clinic our usual time for doing the lobectomy is two months after the ligation. The mortality in my series of operations on toxic goiters has been 3.5 per cent. I find that of the constitutional disturbances operation is most marked in its effect on the nervous phenomena, next on the nutritional disturbance. On the circulatory disturbance the effect of the operation depends largely on the condition of the heart at the time of the surgical treatment. Tachycardia is the most persistent symptom. Concerning the amount of tissue removed, my inclination has been to increase the extent of the resection so that not more than one sixth of the total amount is conserved. Using the term "cure" in the sense of restoring the patient to a state of health permitting the resumption of customary duties, although moderate tachycardia and nervous disorder may be present, we record 70 per cent. of recoveries. For the satisfactory end-results of operation the surgeon is dependent on the cooperation of the family physician.

PHILADELPHIA—FEBRUARY

The Philadelphia County Society met February 13 at 8:30 p. m., President Hammond in the Chair.

"Plastic Repair of Oral Mutilations from War Injury or Operative Attack," was given by Dr. John B. Roberts. This paper will find justification perhaps in the frequent avulsions of military surgery, the burnings with liquid fire in war, and the operative mutilations demanded by delay in radical treatment of malignant disease. While some differences in detail inures in the repair of lesions of lips, cheeks, and jaws from the causes mentioned, the principles of the surgeon's reconstructive acts and the steps through which the human organism responds to his desires are essentially the same. A surprising degree of ignorance exists as to the availability and success of treatment for these forms of facial deformity, and this ignorance appears not only in rural populations but in large cities. Congenital malformations, like harelip and cleft palate, also cicatricial distortions from slow healing of burns and crushing injuries, appear at metropolitan hospitals for treatment months, even years, after the precious moment when the aid of corrective surgery or dentistry should have been sought. The appreciation of the value of early plastic aid is gradually being instilled into the minds of surgeons by the lessons of the present European war. The energy exhibited by the contracting force of fibrous tissue when it replaces granulation tissue in wounds is astonishing. Carrel and deNouy have shown that when open wounds are compelled by infection to heal through the conversion of granulation tissue into scar tissue, the major part of the closure is effected by dragging the boundaries of the ulcer toward a central point. Thus it is that the epidermization is reduced to a minimum and the cutaneous defense against ingress of micro-organisms from without reestablished. The effect of this interstitial contraction on the surrounding and underlying structures is lamentably evident. Slow healing of wounds due to injury, tardy cure of ulcers left by suppuration of tissues, killed by fire, electrolysis or chemical action, leave eversion of lips and eyelids, closure of orifices of mouth and nose, strictures of ducts and produce adhesions that restrain the movements of joints.

Major Hunter W. Scarlett: The pictures which Dr. Roberts has shown remind me greatly of the cases we received at the American Ambulance in Paris in the first two years of the war where I happened to be, the only difference being that war wounds are infected. Such infection presents a serious problem and often it was from five to twelve months before we were able to do reparative work. In our work I was impressed with the importance of making flaps as large again as would be thought necessary for filling in of the gap and of making their bases very large with enough subcutaneous tissue to insure nourishment and prevent superficial gangrene or deep sloughing. I recall two cases in which these precautions were not taken and in which consequent sloughing of the flaps occurred. We were not so successful in taking flaps from other portions of the body as with the use of the pediculated flap. An astonishing fact is that so large an amount of tissue may be lost and the membrane be brought to almost its normal position. In one case in which the whole side of the face was shot away, the bony structures, however, remaining, the wound cicatrized down to possibly an inch in diameter. Nature does much for these wounds. In a number of instances after making the wound surgically clean and approximating the tissues we have left it exposed to the air except for a covering of gauze.

Captain Brush: I appreciate the courtesy of Dr. Roberts in inviting the members of the military surgery class to discuss his paper. I can offer nothing of personal experience of interest, but might refer to the technic of Morestin, whom I saw operate in Paris. In operations under local anesthesia only three take part; he, the assistant, and the hospital nurse, this number being increased by the addition of the anesthetist when general anesthesia is employed. His instruments are in a large open box; very few towels are about. He is very rapid; brings the flaps up as far as they will stand the tension, then unites them. His sutures are almost entirely of silkworm gut which is darkly stained to be easily seen. The sutures are put through the thick edge of the flap with the Hagedorn needle, the ends rapidly tied and allowed to hang long. These the assistant gathers up like reins, holding them until the end of the operation.

Dr. L. J. Hammond: Will Dr. Roberts tell us how he secures the mucous membrane lining for the newly formed lips and cheeks in cases in which there has been great loss of substance. I have found it essential to employ mucous membrane lining in order to obtain an approximation to normal contour of the lip.

Dr. C. B. Longenecker: I would like to ask Dr. Roberts how he determines the interval of time when the wound in a malignant case may be safely closed. If any of the malignancy remains the plastic work is, of course, useless.

Dr. Roberts, closing: When operating on a malignant case I endeavor to get far beyond the area of the disease. I agree with Dr. Longenecker that if this is impossible plastic work is not advisable. Replying to Dr. Hammond, I sometimes try to save mucous membrane for lining the lip or cheek. I do not, however, pay so much attention to this as do some operators because I usually endeavor to get enough skin or muscle turned into the cheek to offset any probable contraction.

I agree with Dr. Scarlett that Nature can do much more for these wounds if they are lightly dressed. A big dressing soon becomes saturated with fluid and forms a pus poultice. I try to dress all my operations dry, and often put on no dressing at all if the lines of the incision are not too close to the orifice of the mouth or nose where it would become contaminated. It is a standing rule that my assistant shall not wash the parts except with a damp cloth in the region not operated on.

Dr. William L. Clark read a paper on "An Analysis of 1,400 Cases of Cancer Treated by Electrothermic Methods or in Combination with Operative Surgery, X-Rays, or Radium." It has been found that electrothermic methods of treatment of cutaneous cancer are more uniformly reliable than other procedures. This is also true of cancer of the lower lip and oral cavity; but operative surgery, roentgen rays, or radium may be used to advantage when metastasis has occurred. When glands or large vessels are involved, electrothermic methods cannot be used with safety in the region of the blood vessels. Operative surgery and roentgen rays are usually preferred in mammary cancer, but a breast may be removed by electrothermic methods. Operative surgery, radium, or both in combination, ordinarily seem best in cancer of uterine cervix, but electrothermic methods are also of value. Cancer of bladder and rectum, unless seen very early, is hopeless. If seen early electrothermic methods offer the best chance of success. Electrothermic methods are successful when the disease is localized and has the advantage over other methods in that the diseased tissue is entirely destroyed with one treatment, blood and lymph channels are sealed, and superior cosmetic results are obtained. The successful treatment of cancer, generally speaking, is the intelligent use of the methods best suited for the individual case, or, when indicated, the use of combined methods.

Dr. John. G. Clark presented a "Summary of 100 Cases of Cancer of the Uterus Treated by Radium." I was particularly impressed with the point brought out by Dr. Clark that so long as cancer is local it can be cured. We have had during the last three years considerably over 100 cases of inoperable cancer of the cervix. One hundred of these have been available for statistical study. So long as cancer is within operable bounds we apply surgical treatment. We began the treatment of these inoperable cases with radium on purely the palliative basis and continued it on that basis because we realize that no case is a cured case under five years and in none of our cases has that length of time elapsed. We hope and, indeed, believe that after the lapse of five years there will be a distinct percentage of these patients still alive and apparently free from the growth, because we have now quite a number beyond the two-year period without signs of local cancer. Dr. Keene, who has been following these cases with me, and I have been watching them with a great deal of interest. The patients come to us from time to time for examination; consequently, the cases we present are cases which have been controlled. We have compared results in the form of some tables; in other words, the palliative side seems to be uppermost. We have one very interesting case in which now two and a half years have elapsed since the beginning of treatment. The woman weighs 240 pounds and is a diabetic, and therefore a serious surgical risk. The radium was applied twice and her symptoms, short of the discharge, have ceased.

If there is metastasis radium does not cure. The great danger in the use of radium is that the striking case impresses you with such force that you are likely to anticipate better ultimate results in all cases than may be realized. The argument for the use of radium is purely that of palliation with a strong degree of hope of cure because we are constantly seeing patients two and two and a half years after treatment with no return. The average stay in the hospital is three days. The free patient can have the treatment while there is bed space just as readily as the one who pays.

Dr. L. W. Kohn: I was asked to speak on Dr. Goepp's paper on the treatment of cancer of the stomach. Though the paper was not read, I may say that of all malignant conditions perhaps cancer of the stomach is most difficult to treat because of the difficulty of access to the organ. We have endeavored to recognize the condition early that the patient may be referred promptly for surgical treatment. When metastasis has occurred operation, of course, is unavailing. Our only resort then is to try to give the patient some degree of comfort in amelioration of symptoms and to offer psychic encouragement. A trial of radium might also be made. I understand that the Mayo brothers have treated well advanced cancer at the cardiac end of the stomach by the use of radium capsules inserted by means of the sound and claim a certain amount of benefit. Certain investigators also have advocated the vaccine and serum therapy.

Dr. G. C. Bird: Unquestionably the electrothermic, coagulation and desiccation methods should be used in some of the forms of epithelioma referred to the roentgenologist. After destruction of the growth the roentgen ray is used to advantage in preventing metastasis. I have had no experience with the treatment of cancer of the uterus with radium. I have seen fibroid of the uterus in which I suspected malignant disease, treated by the Percy cautery, one of which remained cured for two years. In cases of malignancy of the uterus I would not think of depending on the roentgen ray for cure.

Dr. Barton Cooke Hirst: I should like to hear from Dr. Clark his experience with treatment by radium of recurrence of cancer of the uterus. Personally I have been discouraged with the results. In many cases of recurrent cancer after the complete removal of the uterus radium treatment has been invariably unsuccessful except in one case. If, however, we succeed in only one case out of a number we ought to adopt this method routinely. I have one case of very bad recurrence; the patient was operated on two years ago last summer, and within six months had recurrence in the vaginal scar as big as my fist. I referred her to Dr. Newcomet. She is now, having had seven or eight applications of radium, apparently entirely free from malignancy.

Dr. G. Betton Massey: These two very convincing papers lead me to plead for the consideration of cancer as a parasitic disease, although the pathologists have not so determined. Approaching the subject from this standpoint and acting on this probability will give hope in the early treatment and we shall have more early cases come to us. The methods outlined by Dr. William L. Clark enable us to make a frontal attack on these growths, which is not possible with the knife. In the knife treatment of cancer you must necessarily not touch the cancer and must not let any of the infected cells rest on the wound. With the ionic, electrothermic methods and with radium we make a frontal attack, we go through the disease and reach the periphery because we kill as we go. We make a periphery that is sealed against reimplantation of the germ. It seems to me that we should be more exact in the use of terms; while radium is so successful in uterine cases it is not in any sense surgery, as are the other processes mentioned here.

Dr. C. B. Longenecker: Dr. Clark speaks of the large number of cases of cancer of the uterus which are inoperable when first seen. For the last five or ten years there has been an effort made in the state, county and other societies to train physicians to the early recognition of cancer. Results, however, have not been gratifying, since we see almost as many cases of inoperable cancer as before. I do not regard the application of the radium as quite so simple a matter as indicated by Dr. Clark; not every case will stand the same dosage; I think it advisable to try out the resistance of the individual patient before giving the massive dosage. Besides the use of radium in the inoperable cases we have other means of value. At the Jefferson we have the Coolidge tube by which we have an intensified roentgen ray with an absolutely measured dose. A combination of the radium treatment and the Coolidge roentgen ray I think is often an improvement on the radium alone. While there is apparently not much difference in the radiation of the two there seems to be something reached by one not accomplished by the other. We frequently use also one of the electrical modalities in connection with the radium or the Coolidge tube.

Dr. F. Hurst Maier: I think we are all impressed with the very conservative analysis given us by Dr. Clark of his series of cancer of the uterus. If radium can do nothing more in these inoperable cases than check hemorrhage, decrease the discharge and relieve the pain in the percentages given, the treatment is indeed of much value. Would it not be advisable after the surgical removal of the uterus for cancer to give two or three treatments of radium at monthly intervals? Such application, it seems to me, would destroy any foci of malignancy and yield a larger percentage of permanent cures.

WARREN—FEBRUARY

The Warren County Society met at the home of Dr. M. V. Ball, February 25. After the program the host served a much appreciated buffet lunch.

V. H. McAlpin, D.D.S., told of the value of the roentgen ray in dentistry. With the aid of an illuminating box, pictures illustrating the following cases were shown; (*a*) Too long retained deciduous teeth with unerupted and impacted permanent teeth; (*b*) supernumerary right upper incisor; (*c*) good and bad root canal fillings, with abscess conditions that showed the impossibility of certain diagnosis and treatment without the use of the roentgen ray.

Dr. E. S. Africa, an examiner for the local draft board, outlined his recent experiences. He stated that instructions had been received to send to the training camps practically everyone who was capable of working enough to make a livelihood. Every person, who can possibly be rendered serviceable by operation or a course of treatment, must go and the Army physicians are expected to treat them. This explained the action of the local board in sending away various men who were under the care of society members and who were known to be in bad condition for immediate service.

Ira A. Darling, Reporter.

WARREN—MARCH

At the March meeting of the Warren County Society, Dr. Saulsbury of Parke, Davis and Company addressed the society on the subject of the manufacture of antitoxins; this talk was illustrated by numerous lantern slides. Dr. Ralph Knapp described the newer methods of diagnosis of the different types of pneumonia. Dr. C. J. Frantz recited his experience in the treatment of pneumonia. Lieut. George S. Condit, who has returned from England after several months' service with the British Expeditionary Force, answered numerous questions relating to his work.

The secretary was ordered to pay the per capita assessment of the five members of the society who are in the service.

M. V. Ball, Reporter pro tem.

THE TRUTH ABOUT MEDICINES

NEW AND NONOFFICIAL REMEDIES

Since the publication of New and Nonofficial Remedies, 1918, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Typhoid Vaccine, Prophylactic.—A vaccine made from killed Bacillus typhosus. The vaccine is used for the prevention of typhoid fever, for which purpose typhoid vaccines are of recognized utility. Marketed in different sized containers, containing 500 million and 1,000 million killed Bacillus typhosus in 1 Cc. Eli Lilly and Company, Indianapolis.

Typhoid Vaccine, Therapeutic.—A vaccine made from killed Bacillus typhosus. The vaccine is proposed for the treatment of typhoid carriers and as a concomitant measure to the usual routine of typhoid therapy. Marketed in different sized containers, containing 100, 250, 500 and 1,000 million killed Bacillus typhosus in 1 Cc. Eli Lilly and Company, Indianapolis.

Typhoid Mixed Vaccine (Typho-Bacterin Mixed).—A vaccine made from killed alpha and beta Bacillus paratyphosus and Bacillus typhosus. The vaccine is used for the immunization against typhoid and paratyphoid fevers and in the treatment of mixed infections of the typhoid bacillus and the paratyphoid bacilli. Marketed in different sized containers, containing 250 million alpha and beta Bacillus paratyphosus and 1,000 million Bacillus typhosus in 1 Cc., and 500 million alpha and beta Bacillus paratyphosus and 1,000 million Bacillus typhosus in 1 Cc. Eli Lilly and Company, Indianapolis.

Bulgarian Bacillus Tablets-Mulford.—Tablets containing a practically pure culture of Bacillus bulgaricus. Used in the prevention and treatment of conditions due to intestinal putrefaction. Marketed in vials containing fifty tablets. An expiration date is stamped on the label. H. K. Mulford Company, Philadelphia (*Jour. A. M. A.*, March 2, 1918, p. 623).

Arsenobenzol (Dermatologic Research Laboratories) 1 Gm. Ampules.—Each ampule contains 1 Gm. arsenobenzol (Dermatologic Research Laboratories), a brand of arsphenamine complying with the New and Nonofficial Remedies standards. These ampules are prepared for use in hospitals in divided doses. Dermatologic Research Laboratories, Philadelphia Polyclinic, Philadelphia.

Halazone-Monsanto.—A brand of halazone complying with the New and Nonofficial Remedies standards. Halazone is parasulphonedichloraminbenzoic acid. The Monsanto Chemical Company, St. Louis, Mo.

Procaine-Abbott.—A brand of procaine complying with the New and Nonofficial Remedies standards.

Procaine was first introduced as "novocaine." Chemically it is the monohydrochlorid of para-aminobenzoyldiethyl-amino-ethanol. It is used as a local anesthetic as a substitute for cocaine. The Abbott Laboratories (*Jour. A. M. A.*, March 16, 1918, p. 779).

PROPAGANDA FOR REFORM

Shotgun Nostrums.—As the soldier of today uses a rifle instead of a blunderbuss, so the modern physician uses single drugs rather than shotgun mixtures. There are many types of "shotgun" nostrums. Some are dangerous, as in the case of "Bromidia"; some are preposterous therapeutic monstrosities which excite the contempt of educated physicians, as in the case of "Tongaline"; some are merely useless mixtures of well known drugs sold under grotesquely exaggerated claims, as in the case of "Peacock's Bromides." It is impossible to determine from the published formulas just how much hydrated chloral and potassium bromide Bromidia contains, but it is probable that there are about 15 grains of each of these two drugs to the fluidrachm and variable amounts of Indian cannabis and a small amount of either extract or tincture of hyoscyamus. Bromidia is a distinctly dangerous mixture for indiscriminate use, particularly so if the advertising creates the impression that in it the chloral hydrate has been deprived of its untoward effects. Tongaline is said to consist of tonga, cimicifuga racemosa, sodium salicylate, colchicum and pilocarpin. This jumble of drugs would be merely ludicrous, if anything that degrades therapeutics could be considered so lightly. Peacock's Bromides is said to consist of the bromides of sodium, potassium, ammonium, calcium and lithium. The exploiters claim superiority over extemporaneously prepared mixtures because of the absence of contaminating chlorids said to be present in commercial bromids. The truth is that the chlorids are used as antidotes in bromid poisoning. Bromidia, Tongaline and Peacock's Bromides have been the subject of reports of the Council on Pharmacy and Chemistry (*Jour. A. M. A.*, March 2, 1918, p. 642).

Some Misbranded Nostrums.—"Notices of Judgment," reporting prosecutions for misbranding under the Federal Food and Drugs Act, have been issued for the following: Hayseen's Sure Goitre Cure Balsam, a solution of potassium iodid in water, sugar and alcohol. Hayseen's Sure Goitre Ointment, containing petrolatum and potassium iodid.—MacDonald's Atlas Compound Famous Specific No. 18, consisting essentially of sodium sulphate, sodium bicarbonate, a laxative plant drug (apparently aloes), ginger, a small amount of phosphate, a trace of alkaloid and talc.—Faucine, said to be a "warranted remedy" for piles, diarrhea, dyspepsia, scratches of horses and "good" for female complaints, "hog cholera" and other conditions.—Contrell's Magic Troche, containing a little ipecac and claimed to cure catarrh, asthma and diphtheria.—Benn Capsules contain strychnin, arsenic, iron and water soluble sulphates, and are sold as a cure for dyspepsia, backache, headache, leukorrhea, falling of the womb, etc.—Collins' Voltaic Electric Plasters, claimed to relieve pain and inflammation of the kidneys, of value in fever and ague and "good" for simple bone fracture, and would relieve many cases of bronchitis and asthma, female weakness, etc.—Mother Noble's Healing Syrup, containing vegetable cathartic drugs, iron chlorid, Epsom salt and sand.—Stuart Buchu and Juniper Compound, containing no appreciable amounts of buchu and juniper (*Jour. A. M. A.*, March 9, 1918, p. 718).

Medeol Suppositories.—The Council on Pharmacy and Chemistry reports that Medeol Suppositories appear to be an imitation of Anusol Suppositories, which in 1907 were found inadmissible to New and Nonofficial Remedies. "Anusol" was formerly said to be bismuth iodoresorcinsulphonate, but after publication of an analysis in the A. M. A. Chemical Laboratory in 1909, this claim was abandoned and today Anusol Suppositories are said to contain unstated amounts of the indefinite "bismuth oxyiodid and resorcinsulphonate." "Medeol" is said to be "resorcinated iodo bismuth," but no information is vouchsafed as to the character or composition of the ingredient. As the composition of the two preparations are similar, so are also the therapeutic claims. The Council declared Medeol Suppositories inadmissible to New and Nonofficial Remedies because their composition is secret, because unwarranted therapeutic claims are made for them, because the name is objectionable, and because the combination is unscientific (*Jour. A. M. A.*, March 9, 1918, p. 719).

Sodium Cyanid.—Loevenhart, Lorenz, Martin and Malone report experiments looking toward the use of sodium cyanid, administered intravenously, as a means of stimulating respiration in threatened collapse from drowning, etc. (*Jour. A. M. A.*, March 9, 1918, p. 692).

Hypophosphites for the Army.—The purchasing department of the medical department of the U. S. Army asks for bids on three tons, in one pound bottles, of the "Compound Syrup of Hypophosphites." These six thousand bottles of a relic of past generations must be paid for and are to occupy valuable freight space in shipping to various Army posts (*Jour. A. M. A.*, March 16, 1918, p. 783).

Melubrin.—Chemically, melubrin is closely related to antipyrine. It acts as an antipyretic and analgesic and is said to be useful in sciatica, neuralgias and in febrile affections, and as an antipyretic in febrile affections. In Sollmann's Pharmacology, in a discussion of coal-tar antipyretics, it is stated that practical experience has shown that acetphenetidin, acetanilid and antipyrine are the most useful representatives of the group, and that all the others may well be spared (*Jour. A. M. A.*, March 23, 1918, p. 874).

Thyroid Hyperplasia and Iodin.—The evidence indicates that simple goiter is associated with a deficiency of iodin in the thyroid gland and that goiter formation may be prevented by iodin administration. Marine and Kimball have undertaken a study of goiter prevalence and its prevention by administration of iodin at the request of the Committee on Therapeutic Research of the Council on Pharmacy and Chemistry. In a complete census of the condition of the thyroid gland in girls from the fifth to the twelfth grades of a school population of a large community at the southern edge of the Great Lakes goiter district, they found that 2,184, or 56 per cent., had enlarged thyroids, 13 per cent. having well defined persistent thyroglossal stalks (*Jour. A. M. A.*, March 23, 1918, p. 848).

Tyree's Antiseptic and Aseptinol.—Revolutionary changes in the medical sciences have been so numerous and so rapid that the general practitioner has been unable to keep pace with them. In the resulting confusion the nostrum maker has seen his opportunity for exploiting his useless, unscientific or dangerous preparation. Because of the danger of therapeutic chaos, the American Medical Association established the Council on Pharmacy and Chemistry to place the results of therapeutic progress before the medical profession in an impartial manner. Are you availing yourself of the work of the Council, or are you prescribing proprietaries on the advice of their promoters or are you using drugs of established value? Are you prescribing "Tyree's Antiseptic," so-called, or are you using an antiseptic about which there is no mystery, for which no false claims are made and which is really effective?

Tyree's Antiseptic Powder was claimed to be a combination of "borate of sodium, alumen, carbolic acid, glycerin and the crystallized principles of thyme, eucalyptus, gaultheria and mentha." "Pulv. Aseptinol Comp." is claimed to combine boric acid, the salts of aluminum, crystallized phenol, and the active crystalline principles of thymus, mentha and gaultheria. As a twin may differ from his brother by a wart, so Aseptinol was claimed to contain hydrastis canadensis in addition. An analysis of Tyree's Powder showed it to be essentially a mixture of boric acid, zinc sulphate with insignificant amounts of odorous principles. In view of the misrepresentation in one case, it is difficult to understand why it should have been taken for the model of the other. These twin nostrums have been exploited by similar preposterous claims; they are utterly unfit for the treatment of the various conditions for which they are or have been recommended.

More important than the relative merits of nostrums such as these is the question whether the medical profession is going to help to perpetuate the chaotic conditions that the use of such nostrums fosters (*Jour. A. M. A.*, March 30, 1918, p. 949).

Compatibility of Phenolphthalein.—It is better not to combine several laxatives, but those who believe in doing this may combine phenolphthalein with drugs that can properly be prescribed in powders or pills as, for instance, calomel. Since phenolphthalein and calomel are both tasteless, they may be prescribed in powders or enclosed dry in capsule, cachet or wafer, the amount of each ingredient being estimated according to the susceptibility of each patient (*Jour. A. M. A.*, March 30, 1918, p. 950).

Barbital (Veronal) Classed as a Poison by England.—Because of frequent reports of accidents and habit formation, the Privy Council of Great Britain has classified as poisons "diethyl-barbituric acid, and other alkyl, aryl, or metallic derivatives of barbituric acid, whether described as veronal, proponal, medinal, or by any other trade name, mark or designation; and all poisonous urethanes and ureides." As a result veronal will seldom be dispensed except on a physician's order, and that a record of such sales will be kept in the pharmacist's poison book. (The official name for diethyl-barbituric acid of the British Pharmacopoeia is barbitone; in the United States the official designation for this product is barbital.) (*Jour. A. M. A.*, March 30, 1918, p. 953).

THE COMPENSATIONS OF WAR

Wherever you turn today you see some evidence of a great transformation that is going on among us. In one of the great New York hotels, for example, you find a card, surmounted by the American flag, on every table in each one of the many dining rooms. On the card is the following inscription:

"Labor is scarce. Our men are being called to serve their country. We shall not replace those who leave, but shall ask those who are left to work harder, and so do their share. Will YOU, the guest, be considerate? It is one way in which YOU can help."

It is a typical expression of a new national attitude. No person who has seen the private soldier in the trench ordeal of mud, blood and agony will ever again complain of the annoyance and the discomfort of the life of ease behind the battle-line. Toleration is born of suffering. The whole world outlook is becoming broader and bigger. With peace will come charity and understanding.

Before we entered the great struggle for freedom the United States was like a rich, selfish, bloated individual who was wedded to the bank account. A nation is like an individual: the more prosperous it becomes the more it courts comfort and aloofness from disturbing responsibility. But now our souls are being searched and the nation's character is being recast under the stress of sacrifice. Stephen Crane was right when he said, "War is kind."

No practical benefit of the war, however, is more vital than the understanding of Big Business at Washington. A few years ago a combination of capital was regarded as a leprous thing; a militant master of industry was looked on as an enemy to society. Persecution of great corporations carried on for political effect and masquerading as legal prosecution pilloried success and stifled enterprise. Today you have the spectacle of Uncle Sam commandeering the best business brains for war work, sidetracking the government cases against the big corporations for the duration of the war and waking up generally to the fact that the business wizard is one of the nation's chief assets. It means the New Business Freedom!

Nor does this mighty evolution only affect the material things. Everywhere the old order is changing. The one ray of light amid the encircling gloom came when Bolshevikism disclosed the folly and injustice of secret treaties between nations. No more will empires make entangling alliances without the consent of the entangled. Henceforth democracy will be more than a phrase.

We are acquiring a new sense of values both human and economic. We are learning much and we are profiting much by this war ordeal. We have pulled in our belts another notch and we will not protest. We are forgetting our small and petty selves in the larger view of life and service. When all is said and done this is a war of service. To rid the world of the curse of militarism is the highest of all tasks.—Philadelphia *Public Ledger*, February 22.

A NATIONAL DUTY

The Treasury of the United States has a great deal of money to raise and it cannot be raised by bankers alone says Secretary McAdoo. The banks of this country cannot alone sustain America's needs in this war and extend to our allies the essential aid which they must have to continue the war.

The rich of this country cannot do it alone; the men of this country cannot do it alone; the women of this country cannot do it alone; but all of us, the people of the United States, disregarding partisanship, forgetting selfish interests, thinking only of the supremacy of right and determined to vindicate the majesty of American ideals and secure the safety of America and civilization, can do the great and splendid work which God has called on us to do.

THE PENNSYLVANIA MEDICAL JOURNAL
Official Organ of the Medical Society of the State of Pennsylvania
VOLUME XXI
NUMBER 8
ATHENS, PA., MAY, 1918
SUBSCRIPTION:
$2.00 PER YEAR

ORIGINAL ARTICLES

THE FUNCTION AND APPARATUS OF EQUILIBRATION *

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It has been well said that "we take no note of time save by its loss." Many other valuable "blessings brighten as they take their flight"; and equilibrium is one of these which is all too little prized by many who have it, yet is most bitterly missed by him who has lost it. Those who walk the solid earth gain, like Antaeus, new strength and confidence each time they set foot on it; but in earthquake men are filled with terror because the foundation of their experience is shaken and their intellects reel with the shock. At sea one rarely loses the hope that the misery will soon be passed with the return to terra firma, but one suffering from vertigo can feel no confidence in present or future—he has broken loose from all moorings and is adrift and helpless. The tabetic, walking as if in loose sand, has to strain his sight to maintain true relations on a slope, and with closed eyes or in the dark can hardly stand on a level or move without falling; yet, when his swaying is wide enough to impart a stimulant motion to his labyrinthine semicircular canals, the warning is given by these, and by violent effort the erect pose can be recovered. Frequent repetition of this will probably exhaust and nauseate, for he is like the man who has brought his "sea-legs" ashore with him and is "land-sick" when he comes off the sea.

The earthquake is appalling; sea-sickness is nauseating; vertigo is disabling—each is usually demoralizing. Good equilibration is essential to man's safety, comfort and efficiency, and it rests on his sight, his musculocutaneous sense and his labyrinthine apparatus, as though these were the three feet of a tripod on which he stands secure. The boy can walk on his stilts and the circus man can balance on one, but these are in unstable equilibrium. Man, with two of his stabilizing senses, can balance himself fairly if laboriously, though the third be lost. The blind man can stand and walk, despite his loss of sight; the swimmer can be safe, possibly even in the dark, although his floating body is devoid of help from the musculocutaneous sense. His labyrinthine equilibration can serve by itself to secure his safety. But the animal with destroyed labyrinth is largely disabled in the dark or in water and, after brief if any success, is apt to become unable through one sense alone to maintain efficiency. The loss of a sense can be compensated for soon if not at once; far worse is a perversion of one through impaired activity. The other senses must now secure balance, not only without the aid of the perverted one but in spite of its misinformation. A variable lesion disturbs in an ever-new degree; so Charcot taught in cases of Ménière disease that toxic doses of quinin could relieve, by converting the irritative lesion of diseased semicircular canals into a destructive one, which neither helped nor hindered the sufferer.

Loss of the power of equilibration exposes the sufferer at once to perversion of the impressions of his relations in space; only by keeping perfectly still can he avoid vertigo or dizziness, with a false sense of motion of himself amidst his surroundings or of motion of these objects in relation to himself. If one or more of his equilibr tory organs is not silent but supplying false information, not even rest in bed will free him from a sense of instability, as though the bed were trying to throw him out. Where this is due to the localized lesion of the labyrinth, the sufferer is apt to lie on the affected side in rather characteristic attitude assumed almost automatically because mitigating as far as possible the disquieting symptoms. Why is there any difference noted from posture? What is the mechanism which is thus disarranged? Each of you can give the answer yourself, if vaguely. But we are finding it increasingly important to avoid vagueness, to define with all possible accuracy our knowledge of the subject.

Starting with the physiologic, we have in the ear an organ of three functions of which the auditory is not necessarily the most important.

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* Read at the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 27, 1917.

We have but the pair of organs of hearing; yet without hearing a man may be fairly efficient and even happy. With destruction of the hearing ear the other functions may be undisturbed; but lost or perverted equilibration destroys much of the efficiency and comfort, even though each of the remaining separate mechanisms is still able to furnish us with stabilizing perceptions. Of these perceptions we must distinguish the two separate but generally correlated, the static and the kinetic. We must take cognizance, subconsciously if not more definitely, both of our position in space and of any motions which are altering that relation. Hence we have in the ear an otolith apparatus wherein tiny concretions serve as plummets to keep us informed as to the direction of the force of gravity; and a set of semicircular canals which feel, analyze and report to the sensorium every motion of the head, motions which the body usually shares. Set at right angles to each other, each canal has its endolymph set in motion by rotation of the head in its plane; and one or more is stimulated by the flow which sways the neural hair cells of each ampullar part of the canal, much as when we see the wind move the growing grain of the field. While the actual flow of the endolymph has been questioned or denied by men who point to the minute caliber of these tubes, all of the observed facts point to its occurrence; and the phenomena accord with the law of inertia, etc. That stimulation is thus produced we experimentally prove, for when we place a normal person in a smoothly revolving chair, we can by turning him obtain definite reactions, just as Ewald did in his animal experiments causing currents in the opened labyrinth. These reactions are nystagmus and vertigo, the latter shown in falling and past-pointing. Further, we note that flow in one direction, e. g., toward the ampulla in the external canal, gives twice as strong a stimulus as in the opposite direction. Further confirmation of the flow is given in the caloric test of Bárány. If we chill the outer wall of the semicircular canals by douching with cold water or air, similar reactions are obtained, but only in the canal placed vertically so that by the law of convection its chilled fluid should sink. That this is not a direct action of the cold on the ampullar hair cells is shown if we douche with cold water while the head is erect. The expected reaction of rotary nystagmus to the opposite side at once appears; but if we incline the head backward 90 degrees so that the external canal instead of the superior is in vertical position, the nystagmus changes to a horizontal to the right. Incline the head forward 90 degrees, so that the external semicircular canal is again vertical but reversed, and we find the nystagmus is reversed and becomes horizontal to the left. All this with one cold douching.

A few words of reminder as to the anatomy: The membranous labyrinth, conforming in the main with its bony capsule, has two vestibular sacs each with its macula of neural hair cells above which hang the calcareous otoliths. These maculæ occupy planes at right angles to each other, so that, whatever the position of the head, the plummet action of the otoliths can be in play. Opening out from the utricle are the three semicircular canals, each with a pear-shaped ampullar swelling at one of its extremities. Each is somewhat more than a half circle in form and its connection with the utricle forms a complete circle for the flow of the endolymph through it. In each ampulla a transverse ridge rises at the entrance point of the fibers of the so-called vestibular nerve and is covered with the neural hair cells which constitute the end organ. In some of the ampullæ if not in all, these hair cells are twice as numerous on one side as on the other, in probable explanation of the stronger stimulus coming from impact of the endolymph on that side of the crista (Eugene Lewis). These neural cells are connected with the neurones of Scarpa's ganglion in the internal auditory meatus and the fibers pass thence to the medulla, where separating from the associated cochlear fibers they are directed to Deiter's nucleus and the posterior longitudinal bundle. Their exact course I will leave for Dr. Fisher to trace for you.

1717 Locust Street.

CLINICAL STUDIES IN VERTIGO*

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Vertigo may be the only symptom in many cases, or on the other hand it may be only one of a number of symptoms which the patient presents. The lack of consideration that this distressing symptom has received at the hands of the profession in the past must be ascribed to a general lack of familiarity with its nature and etiology. Until very recently the whole subject was regarded in somewhat the following manner. When patients with choked disk, nausea, vomiting, paralysis and mental confusion, or in other words when in cases of undoubted brain lesion the patients complain of vertigo, there is naturally nothing surprising about that. Everyone would expect such a complaint in a "brain case." When patients suffering from some acute illness, such as acute gastritis or nephritis or ptomain poisoning, complain of dizziness, it is naturally stomach vertigo, bilious vertigo or nephritic vertigo, etc. When a patient complains of vertigo without any other associated symptoms, which can furnish an easily apparent etiology, the solution of the problem is not a bit more difficult. He is either suffering from an essential vertigo or from one of those "Ménière things."

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* Read at the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 27, 1917.

Recent careful studies, however, of the physiology and clinico-pathology of the internal ear in its bearing on the large problem of equilibration have thrown considerable light on the subject of vertigo and have tended to create some order out of the existing chaos. This is made evident by the numerous contributions on the subject that abound in current literature. Today we realize that vertigo is the expression of a disturbance in a definite mechanism.

Perfect equilibration and a correct appreciation of the relation of one's own body to surrounding objects is brought about in part by the sense of sight and muscle sense, but chiefly by the vestibular mechanism, the latter consisting of the internal ear, its nerve pathways and nerve centers with which it comes in relation. Destruction of the eye will cause blindness but not vertigo, nor will interference with the muscle sense produce any vertigo or dizziness. Affections of the internal ear, however, no matter how slight, immediately manifest themselves through vertigo and loss of equilibration, so that it is perfectly safe to assume that the internal ear mechanism is the chief equilibratory organ.

Since vertigo is an expression of some derangement of equilibration, it is obvious that the first thought in connection with vertigo should be the most important equilibratory organ, namely, the ear-mechanism. Here it must be emphasized that the ear-mechanism comprises much more than the internal ear. It includes its entire nervous distribution. As an analogy we may consider briefly the visual apparatus. The eye is not the entire apparatus, it is only the end-organ of the mechanism adapted to receive visual stimuli from the external world. The mechanism in its entirety includes in addition to the eyeball the optic nerve and all the nerve pathways through the brain as well as the cerebral cortex where vision is perceived. When an individual has difficulties in vision it is a matter of common knowledge that the trouble need not be in the eyeball itself. Lesions along the pathways connecting the eye with the cerebral cortex and located, for instance, along the optic nerve or the optic chiasm or the optic radiations, etc., will interfere with vision. It is also a matter of common knowledge that the lesion need not actually be located along the nerve pathways concerned in vision. A diseased kidney is readily conceded as being capable of producing blindness, by producing a poison which reaches the visual mechanism and directly affects it at some point. In a similar manner, although vertigo can result only when the vestibular apparatus is directly affected, it is not essential that the lesion be located in the apparatus itself. Distant lesions by affecting the circulation can reach the apparatus and produce dizziness. In the case where the complaint is loss of vision, not only the doctor but the patient himself immediately knows that it is his visual apparatus which is affected and he is therefore promptly referred to an ophthalmologist who is usually able to tell whether the eye itself or some of the pathways running from the eye are affected. A general appreciation that vertigo is a disturbance of the ear-apparatus would similarly send the dizzy case to the otologist who is able to tell by a careful study of the ear-mechanism whether the trouble is remotely situated and is simply irritating the apparatus or whether there is a lesion of the apparatus itself.

A careful ear examination has a great practical usefulness. Given, let us say, a case of vertigo, how is the physician to determine whether he is dealing with a simple, evanescent toxemia, or on the other hand perhaps with the beginning of some very grave intracranial affection such as brain tumor, brain abscess, multiple sclerosis, cerebral syphilis, syringomyelia, thrombosis, or infarct of a brain blood vessel, etc. In a careful study of the internal ear we are furnished with a means of definite information as to the nature of the causation of the vertigo. The following case illustrates some phases of this subject.

A. W., 41 years of age, was referred on Sept. 17, 1917, with the following history. About one and a half years before the patient had a sudden attack of dizziness. As he described it, it seemed to him that everything about him was turning from side to side. This was accompanied by staggering. The first attack did not last very long and was not severe enough to compel him to take to his bed. Similar attacks came on with greater or lesser frequency and varying degrees of severity. Although he could not say just how many attacks he had had, he knew that he was never free from an attack of dizziness even a single day. His family physician treated him for six months but could give no relief from the vertigo. He then consulted six other doctors in succession with no better results. His chest, abdomen, circulatory and nervous apparatus were all carefully studied and found normal. Beyond a chronic running ear on the right side since childhood and some evidence of neurasthenia, there was nothing that could throw any light on his case. Seven months ago he applied to an otologist for ear treatment. The discharge did not cease and the patient was advised to have a radical mastoid operation performed. He consulted another otologist who also advised an immediate operation. His dizziness was meanwhile getting steadily worse and Dr. Langbord, his first medical attendant in whose care the patient had again placed himself, referred him to me for an opinion whether an ear operation should be performed. Dr. Langbord stated that the patient had lost eleven pounds in weight, that he was generally below par with some evidences of neurasthenia, and that he was unable to follow his occupation because of his dizziness.

In attempting to determine the cause of his disabling vertigo and the possibilities of relief through an operation on the ear, the following had to be considered: (1) His vertigo might be purely functional and not the result of a demonstrable organic lesion anywhere; (2) the vertigo might be reflex, referred or irritative such as can occur through an ocular disturbance, etc.; (3) it might be due to a circulating toxin within his system such as syphilis, etc.; (4) it might be due to a local impairment in the internal ear, produced by the chronic suppurative process which he had had for so many years, and which may have invaded the labyrinthine contents by extension; (5) the vertigo might be a symptom of an intracranial lesion.

Let us see how an ear examination could throw light on such a case. When a normal ear is stimulated by setting the labyrinthine endolymph in motion either by turning the individual in a revolving chair or douching the ear with cold or hot water, there is produced an eye movement of a definite type, also a vertigo lasting a certain length of time which is made manifest by past-pointing and falling. It is evident that if stimulation of the ear makes the eye move, there must be a nerve pathway between the ear and the eye. Similarly if stimulation of the ear produces vertigo, there must be a nerve pathway between the ear and the cerebral cortex.

In this case the right ear shows the following findings: Marked deafness, which, however, was the result of damage to the conducting apparatus and was not cochlear or of inner-ear type. Stimulation of the static portion of the inner ear gave perfectly normal responses; that is, there appeared promptly a normal nystagmus with normal vertigo, past-pointing, and falling. This indicates that the right static portion of the inner ear is unimpaired. The left showed the following: Hearing was practically normal. Stimulation of the static portion of the inner ear, however, produced impaired responses in that it took a long time for the nystagmus to appear and when it finally did appear, it was of poor quality. The vertigo was marked but the past-pointing and falling were markedly impaired. Turning the patient in the chair produced subnormal nystagmus but exaggerated vertigo with past-pointing.

These findings suggest the following conclusions: The case is not functional but organic, because there is a definite demonstrable impairment of the ear pathways as shown by the poor responses obtained on stimulation. In functional cases the vestibular mechanism is found intact. This evidence of damaged ear pathways also excludes the ocular mechanism as being the source of the vertigo. The impairment, therefore, must be either within the ears or within the cranium. The right inner ear, the one with the chronic suppuration, is normal because stimulation produces normal responses. The left inner ear is also normal because its stimulation produces a normal vertigo. A lesion within the labyrinth itself interferes with all of the reactions because the hair cells concerned in eye movement and the hair cells concerned in vertigo are found alongside each other, and it is difficult to conceive of a process that would destroy one set and leave the other intact. We must conclude, then, that this patient's disturbance is intracranial. The tests show that there is no gross absence of any of the reactions but instead rather a partial impairment of several of the reactions. This is usually seen in cases of strong toxemias such as syphilis or the virulent focal infections.

The patient had a Wassermann test performed which was reported positive and appropriate treatment advised.

This case illustrates how by careful application of the Bárány tests the otologist was able to furnish useful data to the physician and incidentally saved the patient from a serious operation which could never have helped his vertigo since the labyrinth was perfectly normal and was in no wise concerned with the vertigo of which this patient complained.

Medical Arts Building.

DISCUSSION

ON PAPERS OF DRS. RANDALL AND FISHER

Dr. George W. Stimson, Pittsburgh: The study of the static labyrinth has been intensely interesting to me for several years, and I greatly regret that we did not have the opportunity of applying the Bárány tests to all of the cases of so-called labyrinthine deafness that we have seen in the dispensaries in years gone by.

I would like to ask Dr. Randall and Dr. Fisher, who have seen many more than I have of these cases, if they have ever run across one similar to one that I had a couple of months ago, interesting principally on account of the etiology, and secondly on account of the selective type of lesion. A woman, 26 years of age, eight months pregnant, came to me with a history that six weeks before she had been seized with a severe pounding tinnitus aurium in her right ear, and that she had been deaf in that ear ever since. I tried to find out the cause, and she said she had suffered from ptomain poisoning and had been so nauseated that she could keep nothing on her stomach for eight or ten days. Every time she raised her head off the pillow she became dizzy and vomited. I felt sure that her symptoms were those of a labyrinthine disturbance. The tinnitus aurium had disappeared, but the deafness persisted. On questioning I tried to find out whether she had really had ptomain poisoning. If it was ptomain poisoning she had no intestinal disturbance; there was no diarrhea. When I tested her I found she had an absolutely deaf right ear. She was deaf to all the tuning forks with the exclusion apparatus on the left ear. She had entirely lost the function of her right cochlea. But when I put her in the Bárány chair and revolved her ten times to the right, she had twenty-six seconds of horizontal nystagmus to the left. When I turned her to the left she had twenty-six seconds of nystagmus to the right. The caloric test gave prompt and equal nystagmus on stimulating either ear. At the same time the cochlear function was absolutely abolished. She had lost, then, the function of her cochlea, but not that of the vestibular apparatus, at least not permanently, for the latter had recovered when I first saw her.

In all probability she had a spontaneous nystagmus at the time of what she called the "ptomain poisoning attack," and she had tinnitus aurium and dizziness, vomiting and deafness. I tried to find some cause for it. Ménière's disease is supposed to be hemorrhage into the labyrinth; call it that because I do not know what else it is. She probably had some sort of apoplexy, we will say, into her labyrinth. I found that she gave a rather unusual etiology. She was six and a half months pregnant. On close questioning I found she had had coitus, at the time of her attack (after a long abstinence), which was very violent and had been accompanied by "sort of unconsciousness," and, as she said, "sort of spasm." All of her symptoms, tinnitus and deafness, nausea and vomiting, dated from that time. Her deafness was absolute when I saw her six weeks later. As I say, the function of the cochlea was entirely abolished, but she had recovered function in her static labyrinth. A Wassermann test was negative to all antigens. Urine and blood pressure were normal.

To me the case was interesting, both from the fact of the unusual etiology, and second from the fact that the lesion destroyed the cochlea, but did not destroy the function of the static labyrinth.

Dr. Edwin S. Ingersoll, Rochester, N. Y.: I have not the honor of being a member of your society, not practicing in this state, but I would like to say a word in appreciation of the work that has been done in the Bárány tests and in tracing out the results of Bárány tests by your men in Philadelphia. They have put this work on a basis that it has never been on before, and they have made it applicable to cases that the German school apparently never thought they would be able to do.

I have been working for some time with this work, simply in connection with the aviators, and in going about the various cities in connection with the work I have found that the men, the general men as well as the ear men, have taken a very great interest in it, and have come to appreciate that finally the ear man is going to be put in very much the same relation in connection with general troubles and with the cases that come to the general physician, that the eye man or the neurologist is at the present time. All doing general work have been in the habit of sending their cases to the neurologist for eye examinations; but it has been quite rare for the general man to send a case of dizziness to the specialist in ear disease. But the time is certainly coming when that is going to be done, because now we have a series of tests, and the great beauty of them lies in their exactness. We are able now to tell and to place the lesion causing dizziness; to be able to give the patient an opinion as to whether that is functional or whether it is organic, which is an extremely important thing for the patient to have and for the patient to know. Also, of great importance, we are able to tell the patient whether he has a peripheral or a central lesion.

We find quite a proportion of the applicants for the aviation corps who do not come up to standard in the tests. In other words, they are pathologic one way or another; and in various cities where the men (pathologic cases) are brought for examination, we have been able to find central lesions before the neurologist has anything on which he can base a diagnosis, and even before the general man has suspected that there may be such a thing as a central lesion. It seems to me that is a tremendously important thing, and if it had not been for this school of Philadelphia men who have done this work, it is impossible to say how long it would be before the work would have been put on a practical basis. Pennsylvania men are to be congratulated; they are the men who have done this very important work, which is an advance in better neurology. They have made a greater advance in that work, I am safe to say, than anything else that has been done in the last hundred years, and I feel that they are to be congratulated.

Dr. Randall (closing): I accept with all heartiness the warm congratulations that have been given to the men of this state, and especially to myself in my own clinic, for the beautiful work that has been done there. I can do that the more modestly, because the work has been so largely in the hands of Dr. Isaac Jones and Dr. Lewis Fisher, and, while I have of course taken my share in it, I must also accord a large part of the thanks to Dr. Mills, Dr. Spiller, Dr.

Weisenberg, Dr. Frazier, from the surgical side, and all the men who have helped us in this work, not only in that one institution, but in a dozen or more of our hospitals where the opportunities have been afforded us and the work has been pushed to the fullest investigation, even to the point of postmortem study. In *Punch* long ago, talking about Vienna, the Englishman said: "Those Vienna men are great on diagnosis." "Yes," said the American, "and always follow it by an autopsy." And it is very important that we should have the crucial test of section to determine whether these findings on a functional basis are correct or not. Fortunately, many of these sections have been antemortem, and have not yet been followed by death. They have been surgical interventions rightly directed. Because of the tests which have been made, the lesion has been located, and surgical intervention and cure have followed. As shown to you on the screen here, we have these cases where the results have after long years still been maintained. The patient is in good health and even in fairly good function in many respects. We are very fortunate that it has been with such magnificent neurologists that we have had to deal in Philadelphia, men fully up to the possibilities of the matter, and men so able to give us the full neurologic aid with regard to it.

Yet patients sent to us sometimes have been found to be absolutely misunderstood by the neurologists, as has been proved by our tests. A lesion for instance, supposedly of the right parietal lobe, has been shown to be in the left cerebellopontine angle. It means a good deal when the best powers of the country have been exercised and have been misled, to be set right by tests of this sort. If we seem to be too cocky, please remember that in a large group of cases we can get from this line of study results that not only have not been otherwise obtained, but are corrective of results apparently proved by other means.

As to the point made by Dr. Stimson, why the cochlea should have been damaged in a case of labyrinthine involvement while the static-kinetic apparatus has been preserved, we recognize the rule in the evolutionary scheme of life, that the older organs of the body are the less prone to break down. The cochlea is a later development than the equilibration apparatus.

I have shown you that even in the early forms of life, as the medusa, we have a pretty fair, perhaps you might almost say, a perfect static apparatus, and therefore this apparatus seems to be much less vulnerable. So, while in Dr. Stimson's case it is almost certain that any hemorrhagic condition there taking place did occur in the cochlea, very possibly in the spiral ganglia region, so completely as to destroy the cochlear function, there was some vertigo and probably nausea at the time, indicating that there was a passing effect on the vestibular labyrinth. It is perfectly possible that we shall have an involvement even of the one semicircular canal and not of the others; and we may have hemorrhages which involve one to a destructive degree, and others only to an irritative degree, and no further.

There is one little point that seems worth bringing out. We are aware that in the cochlea we have a portion which is very vascular, a minute blood vessel network underlying a group of cylindrical, apparently secreting, cells, the stria-vascularis, as it is called. In like manner we have a part of the eye, the pars ciliaris retinae, which, while not functioning as retina at all in the reception of light, probably does function in the secretion of the aqueous humor of the eye.

So when we have stimulative congestion of the ear, we have a tendency for greater blood supply to these parts, for greater secretion of the endolymph fluid within, for the establishment of a current past the cristae, giving rise to the stimulus, and we may get vertiginous results, disappearing without damage to the parts, but showing that there has been congestive trouble present.

So in such a case as Dr. Stimson's, we can have the more primordial organ escape, even though seriously involved at the time, recovering when the later-formed organ of hearing failed to escape.

There are many other points which I would like to bring out, but the one which I think I will close with is this: In the work, as I said before in relation to the aviation work, this is not a long-continued and elaborate series of tests. A few turns in the chair bring out the facts, not only by the establishment of a proper duration and type of nystagmus and of vertigo, but that the degree of past-pointing is in accordance with what it should be. In a few moments we have tested, therefore, both labyrinths in respect to the so-called horizontal canals—the external canals, the pathways from them and the brain centers to which these pass. Then by putting the head forward we may at once test the superior canals in two or three turns, have the falling which the would-be aviator is awfully ashamed of, alarmed lest it expose his incapacity, instead of proving that he has a proper function of the organ of equilibration. The newspapers tell awful tales of our investigation of these men, and how we spin them, and if they become seasick and dizzy reject them. It is just the reverse. It is the man who will not respond to the tests, just as it is with a nerve deafness, when a man cannot be made seasick, so the man who cannot be made dizzy, one who would not know whether his machine was wrong side up or right side up, is not the man to send up in the air, putting a valuable machine and his life and a comrade as well in serious danger.

Therefore you see that these investigations are not hair-splitting points that are pushed by us because we are terribly interested in them. We may be "hipped" on the subject, but we at the same time have a great deal of common sense left; and we bring these things forward as being perfectly practical. Please note that in the pictures many of these patients were smiling almost to the point of hiding their eyes and the nystagmus, showing that this is not a very dreadful test (that they do not suffer very seriously in the matter), and that few, if any of them, are nauseated by it. It is only where we go too fast with our work, trying to carry things forward too much at one time, that we are troubled on that score.

"A word of advice, encouragement and good cheer goes a long way to lift our burdens, and none is so successful that he does not at times need just such a word to spur him on to even greater achievements. If this be true of the men successful from a worldly point of view, how much more applicable it is to those just starting out in life. No man should allow his own affairs, whether of a business or personal nature, so to crowd his day that he cannot take time to pause and dispense good cheer to those in need of it."

THE PLACE OF OPIUM IN THE THERAPEUTICS OF INFANCY AND CHILDHOOD *

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Probably the human mind is so constituted that it is to a certain extent, let us not say gullible, but at least very easily swayed by enthusiasm over any new thing, and, conversely, by adverse criticism of this when it arises. It is said that among the Athenians, who of the old peoples were especially keen for a sensation, the great question on meeting each other was "What new?" We are warned by the Apostle Paul not to be "driven to and fro by every wind of doctrine;" to hold fast that which is good." Yet, whatever may be true of the rest of mankind, certainly the medical profession seems remarkably disposed to grasp enthusiastically at everything new in the way of treatment without waiting for sober judgment, careful trial, and mature consideration to determine its actual value; and is equally prone after a while to join in wholesale condemnation of it when criticism comes. We swing back and forth like the pendulum, in a way which often places us in a most unenviable position before the eyes of the laity. Fortunately, our pendulum at last comes to rest, and we then appreciate what the true position of any given remedy is in our armamentarium.

Consider, for instance, the case of the employment of the coal-tar derivatives in medicine. Somewhere about 1884 antipyrin was put before the medical profession as a means of controlling fever, and shortly afterward, as a result of its enthusiastic reception, a host of other analogous synthetic preparations of the carbolic acid or anilin groups, respectively, followed. Everybody was reducing fever from whatever cause by giving antipyrin, and American physicians were among the worst. A foreign physician published a paper showing that typhoid fever could be made to run practically an afebrile course by the use of the drug; yet had to admit that the symptoms in general did not appear to be improved, or the duration of the disease shortened by the procedure. Then the reaction set in, the pendulum swung, and antipyrin received wholesome condemnation as a dangerous drug, not to be given at any time for the reduction of temperature. Both extremes were wrong. Finally the pendulum settled in a position of rest, and we now all grant to antipyrin and similar drugs many valuable properties, even the controlling of fever in suitable cases. Our enthusiasm for diphtheria antitoxin led many physicians to use and recommend it for other conditions for which it was manifestly absolutely unsuitable; and the discovery of the antimeningococcic serum made many of us forget that there were other remedies for the disease which had been proven by long trial to be of value in the past, and would still be of service if not neglected. Go back to the time of the Charleses in England, and even decidedly after that. We read with a smile on our lips and derision in our hearts of the polypharmaceutical prescriptions of the men of the times, containing earth-worms, snails, a toad burned in a new pot, the udder of the sow, and other objects which seem to us rather horrible and foolish. They were finally abandoned entirely, and now we have swung back again and are giving what these substances were — animal extracts, such as the thymus, the thyroid, the testicle, the pituitary body, the corpus luteum, and so one; given with reason and often really without any, for all sorts of diseases. Again, we were fighting against the entrance of bacteria in any form into the living organism; now we are giving millions of dead germs in the form of vaccines, and nearly everybody is enthusiastic; but do you realize that as yet with little definite good results except in a few conditions? It is right to try the treatment; yet let us curb our enthusiasms and realize, as many of the prominent men of the profession are now realizing, that this plan of therapy holds a very definite, but a very limited field.

All this is by way of preface to the consideration of another remedy; not, it is true, a new one, but one which, like others, has suffered through the swinging of the pendulum, a reaction which has extended farther than it should. I refer to opium and its employment in early life. No reference is made here to its administration to adults.

It is interesting to note the changes which have taken place during the last forty years or so in the opinions of the medical profession regarding the employment of this drug in the disorders of children. Previous to this almost every medical man was disposed to give freely and unconcernedly opium in some form to every child showing what seemed to be the slightest indication for it. Every child with bronchitis was liable to receive a cough mixture

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* Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

containing it. Colicky pain in infancy was treated by mixtures in which paregoric was an ingredient; and practically in all cases of diarrhea opium was given without much consideration of what the cause, the stage, or the attendant symptoms might be. If the doctor was not ready with his opiate, the mother had the proprietary soothing syrup, cholera mixture or cough drops ready at hand. Even decidedly after this period the drug was still used without much discrimination, and much too frequently. Much good was accomplished, but probably as much or more harm. As regards the good, I well recall a series of clinical observations I conducted on children at the out-patient department of the Children's Hospital of Philadelphia. Without selection a certain number of cases of diarrhea were treated with bismuth alone; others with a tannic acid preparation alone, using either hematoxylin, krameria, or catchechu; others with dietary measures alone. It was borne in very strongly on us all that in a very decided proportion of cases no satisfactory lasting results were obtained until an opiate replaced, or was combined with, the other treatment. This in a degree was good fortune rather than good management, since the choice of cases was made without any attempt at discrimination. Nevertheless the fact remained, and enough cases were treated to avoid a mere coincidence.

Such an abuse of opiates as prevailed in the profession was sure to be followed by a reaction; and this did, in fact, occur, and to such an extent that many physicians became opposed to the giving of opium in any form to children, and especially to infants. It "masked the symptoms"; it "locked up the bowels," and "increased fever." Now we are swinging back to a more rational and moderate view. Indeed, I thought that we had so swung, and were fairly well agreed as to the therapeutic position of the drug. Certain occurrences, however, have indicated that this conclusion is by no means true, and that there are still many who have an unwarranted fear; with whom the prejudice of the first reaction still persists. Only a couple of years or so ago I heard a paper read by a prominent teacher of pediatrics, recommending opium as the best of all remedies in certain diarrheal states in infancy; and this view combated with force by another teacher, equally prominent, on the ground that the drug was a dangerous remedy in early life, not to be given if it could be in any way avoided. Then I happened to come across an article by Döbeli, who had collected the expressions of opinion on the subject by a number of German pediatrists, and here, too, the divergence was great. It is, I fear, to be expected that this difference of opinion which prevails among the teachers may be even more widely spread than supposed in the profession at large; and this thought has been the incentive in the effort to point out what seemed, to me at least, to be the proper and reasonable place of the drug in the pediatric pharmacopeia.

Of course opium is a dangerous remedy. So are strychnin, chloral, atropin, digitalis, and, in fact, almost all drugs which have real value. Given at the wrong time, in the wrong dose, or in the wrong case, it is certainly in the class of poisons. Administered to the proper case, in the proper way and with due consideration of the secondary effects, it is one of the most useful remedies we possess. Have we any valid reason for a prejudice against its employment, especially in early life? I think not. The infant in the first three months of life is often remarkably susceptible to the drug, and this is true also, although to a much less extent, throughout infancy. Marantic infants, or those with threatening unconscious states, may be dangerously affected; but this is true of other drugs under certain conditions. For instance, the nervous system of little children is very susceptible, and it is perfectly possible to increase the tendency to convulsions, or even set them going, by giving to an infant in an irritable, nervous state a dose of strychnin, which, under other conditions, would be entirely safe. I am sure that I have seen this happen. It is only necessary, then, in giving opium, that we make due allowance for the age and the susceptibility of the patient to this drug.

Let us consider briefly, then, some of the indications for and against the employment of opium, so far as early life is concerned. What I shall have to say is based on a rather extended experience with numbers of cases, for the detailing of which, with a few exceptions, there is not time here.

Pain. First comes the relief of pain. There is no drug which satisfactorily can replace opium for this purpose. At the same time it is on the whole of less service in early life than later, because the suitable cases are fewer. One is often strongly tempted to give paregoric or other opiate to an infant with the colic of indigestion; and I know, in fact, that this is too often done. I believe that this is, as a rule, a mistake, and that other remedies are better. The opiate, it is true, relieves the pain for a time; but it diminishes peristalsis, and prevents the expulsion of the gas on which the colic depends. It is only in the exceptional cases in which the colic is so intense that the development of convulsions is feared (and these cases are very few) that the administration of an opiate is wise. An infant with colic probably suffers severely, and it seems cruel not to relieve even by an opiate, if you can. At the same time, it is a noteworthy fact that the child appears to be little if any damaged by the suffering. The day after an infant has cried all night with colic, the father, mother and nurse are exhausted, but the patient looks as well and seems as happy as though nothing had happened. We are, however, hardly warranted in dosing the infant for the sake of the parents. Children with acute articular rheumatism often suffer so greatly that opiates are needed, as in adult life, and should be given. In the pain of appendicitis or of peritonitis from any cause, opium is quite commonly condemned on the ground that it masks the symptoms. I share the view that we are usually better off without it. On the other hand, if the diagnosis has been made, operative treatment determined on, and the fact that opium has been given is known, the masking would appear to be a matter of indifference. The question of operative interference is not determined by the amount of pain, and when it is unusually severe I see no good reason why relief should not be given. In any event I share the belief of those clinicians who prefer it to the administration of purgatives. Fortunately, as a rule, we may well do without it.

Cough. It is to be borne in mind that cough may be due to a large variety of causes. In many cases there is an acute or chronic irritation of the pharynx; in others, irritation by enlarged tracheo-bronchial glands; in still others, the cause is reflex from digestive disturbances; in some, it appears to be a nervous habit merely. These are only a few of the causes of a cough for which opiates should not be employed. On the other hand, at the begining of an acute febrile tracheobronchitis, with a frequent, dry, annoying cough, there is nothing, in my experience, which is superior to the administration of opiates in small, repeated doses. In spite of the apparent physiologic incompatibility, the drug may well be combined with ipecacuanha. Our medical forefathers gave this for the purpose, and we have not surpassed them in this respect. After the fever is over, the secretion is becoming established, and the cough looser, other remedies are generally to be preferred. I want to call your attention, however, to the fact that, against all preconceived rules, there are not infrequently encountered cases in which the cough, although loose and apparently demanding expectorants, is still so frequent and harassing that an opiate mixture is required; and it is remarkable what a prompt change for the better may sometimes follow the adoption of this plan of treatment. I have seen cases in which I had persisted with an expectorant mixture because the condition apparently demanded this, yet without any benefit whatever, and in which recovery has promptly taken place when sedative treatment was begun. Such cases are sometimes greatly aided, too, by atropin; but atropin in no way replaces the opiate; the purposes are different. The two may sometimes well be combined. Cases in this stage demanding opium are, of course, the exception, not the rule. This is not a recommendation for the constant or even frequent treatment of tracheobronchitis with opium. I do not like to give cough mixtures of any sort to children. An opiate constipates, diminishes appetite and frequently causes vomiting. An expectorant likewise affects the appetite and digestion. The average case is better treated in other ways.

An old-time remedy for spasmodic croup was opium; and there is probably no better method of warding off an attack than the giving of opium, ipecac, and perhaps antipyrin or a bromid in fairly full repeated doses during the afternoon. Asthma is undoubtedly relieved by opiates in many instances; but inasmuch as the disease is of a chronic nature, the danger of forming a habit is to be considered. Other remedies should first be tried. In moderate cases of pertussis, in which the patients get through the day well but are troubled at night, the administration of a mixture containing opium at bedtime, and perhaps again later, will often ensure fairly good repose, and avoid the necessity of giving medicine during the day. The cough of pleurisy and pneumonia as occurring in early life does not, as a rule, require sedative treatment. Sometimes, however, it is so frequent and harassing as to be a distinct source of danger in pneumonia, from the exhaustion which is produced. Opium in some form should certainly be employed under these circumstances. I have seen some very striking cases of improvement under this treatment. It is but a short time since I had in the Children's Hospital a case of bronchopneumonia in which the cough seemed almost incessant, and the infant was rapidly losing ground. Improvement began as soon as we started sedative treatment in sufficient dose. Here may be stated that there is one condition in pneumonia offering a very positive contra-indication to the employment of opium; viz., the abdominal distention which occurs not infrequently in severe cases. This adds greatly to the danger by interfering through upward pressure with the cardiac and respiratory action. Opium only increases the lack of peristalsis and makes the condition worse.

Vomiting. In states of acute indigestion giving rise to vomiting, opium has no place. It is more liable to do harm than good. Certain forms of vomiting are, however, well treated by it. Some of the severe cases of recurrent vomiting are probably relieved by nothing else as well. This disease may be due to an acidosis (this is not yet quite certain), and in this event the giving of an alkali in full dosage is required. In any event, I have on several occasions seen the prompt and permanent cessation of the attack follow the employment of morphin hypodermically. I am convinced that I have seen it save life. I recall especially one instance seen in consultation a number of years ago. The little boy lay exhausted on his side. Every few minutes a stained, watery fluid ran from the mouth, the child being too weak longer to retch with any power. The bowels were obstinately constipated, and the condition strongly suggested intestinal obstruction as the cause of the symptoms. I urged as strongly as I could the giving of a hypodermic of morphin, but the attending physician was afraid of it. Another consultant was called and various remedies were tried. Finally, as the attending physician told me later, he gave the morphin, and the cessation of the vomiting was immediate. The diagnosis of recurrent vomiting was confirmed later by the occurrence of other, but fortunately less severe, attacks. In another case I also urged morphin, but for some reason its administration was delayed. The condition of the child grew so desperate and the weakness so great, that a thrombus formed in the artery of the leg and the foot became gangrenous and finally had to be amputated. Here, too, morphin was finally given, with immediate benefit, and the child's life was saved.

There are many cases in infancy where vomiting has become, so to speak, a habit of the stomach. I recall one instance in an infant of 11 months in hospital practice where, as a sequel to pneumonia, vomiting was so frequent and severe that daily we expected to find the little bed empty. In desperation I requested the intern to give 1/100 of a grain of morphin hypodermically and to keep repeating this, if necessary, until mild narcotization followed. Prompt and remarkable improvement followed; by the next day the vomiting had entirely ceased, and the infant recovered. Of course, it is not implied here that opium is the usual treatment to be selected for obstinate vomiting. In selected cases, however, it is a specific.

Nervous Affections. In the ordinary case of eclampsia in infancy and early childhood opium is not needed. Many of the severe ones, however, seem not to yield to treatment until it is administered, best hypodermically. Even in epilepsy the Flechsig method of the administration of the bromids and of opium consecutively is a well-known procedure sometimes very effective. I recall particularly one unusually severe case of petit mal, believed to be hopeless by me and by Dr. Horatio C. Wood, then professor of nervous diseases at the University of Pennsylvania, who saw the child with me. The little boy of 4 years would have from fifty to one hundred attacks a day, in which he would fall like a shot, and be over the attack almost immediately. His face was badly scarred by the ecthyma of bromids, and by the cuts and contusions which the falls had produced. Nothing previously tried by me had done the slightest good. Finally, after the completion of a course of bromids, opium was commenced. The improvement was immediate and truly wonderful, and in the course of a few days the attacks ceased entirely. This was about twenty years ago. The boy is now a useful and healthy man. Naturally, we cannot expect such results in every case. I have tried the Flechsig method in other instances; sometimes with improvement, oftener with no effect.

A well-recognized plan of treatment years ago for cerebrospinal fever was the administration of opium in full doses. In these days we should not forget the intense pain from which the patient often suffers, and the relief which the drug will give. There is no contra-indication to it here, for the pain disappears when coma is coming on. Opium should never be given in any condition of threatening coma. It is liable to hasten its development.

Diseases of the Heart and of the Kidneys. Of all drugs opium is probably one of the best for the treatment of acute pericarditis and endocarditis. It relieves the pain and cough, and will quiet the excessive cardiac action as no other drug will do. Even in the distress of failing compensation in chronic endocarditis and myocarditis it will often relieve the condition for a time and act as a cardiac stimulant. Digitalis is not suited to the acute cases, and of less value than opium for the immediate relief of the chronic ones. There is a widespread belief that opium is contra-indicated in cases of nephritis, owing to the danger of a cumulative action from its imperfect elimination. This can in no wise apply to its occasional administration if there are symptoms which would be relieved by it; and it is to be borne in mind that in threatening or established uremic symptoms of a nervous nature the drug is one of the most serviceable.

Diarrhea. The reaction from the too free use of opium in this condition in children still persists, to what seems to me an unwarrantable extent. It is undoubtedly true that it is not required in the majority of cases and is capable of doing much damage, and that our principal treatment should be dietetic and hygienic. There is no disorder in which a more careful discrimination is necessary. In all cases of acute diarrhea in which there are symptoms indicating auto-intoxication of some degree, it is entirely inadmissible. When, for instance, there still exists vomiting, high fever, nervous symptoms, foul evacuations and distention of the abdomen, the effort should be made to empty the bowels, and to prevent food of an improper nature from entering them. On the other hand, after all danger of intoxication is apparently over, it not infrequently happens that numerous large, liquid movements persist and are a distinct element of danger through the loss of liquid from the economy. Under such circumstances opiates will do good by quieting the too active intestinal peristalsis, and they should certainly be used. It is necessary to give the drug in sufficiently large doses, but not too near together and not large enough to narcotize the patient. When the condition is urgent it should be given hypodermically in the form of morphin. Infants are often very susceptible to opium under these conditions. I have seen four drops of paregoric narcotize a 4 months old infant. This susceptibility is, however, not a contra-indication, but only a cause for the employment of care. For the frequent movements of ileocolitis, accompanied by pain and straining, opium is distinctly needed, and should be given regardless of the presence of fever; which is not due in this disease to any auto-intoxication.

What has been stated is not in any way to be taken as a brief for the use of opium in the diseases of early life. The intention has been merely to indicate under what conditions, in my opinion, the drug is serviceable, and when not. Many more instances could be given, but these are sufficient for illustration. The effort has been only to point out that we are in danger of being swayed too much by the old prejudice, the result of the reaction of which I have spoken. My sincere conviction is that to employ the drug too readily is as bad a mistake as, but no worse than, never to give it at all. Always a careful consideration must be given not only to its immediate but to its secondary effects. We know it can do harm. We should know, too, that sometimes not to use it does more harm.

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DISCUSSION

Dr. Harry W. Albertson, Scranton: I thoroughly agree with Dr. Griffith in this statement that opium has its place in the early stages; but, personally, I have always been opposed to the use of opiates in children. I have seen a number of cases in which opium was given too hastily or in too large doses. Then, too, we must remember that there is in certain individuals, and especially in children, an idiosyncrasy to the use of narcotics of any kind, particularly opium. However, it has its place. I believe the use of opium for pain should be governed by the cause of the pain. For instance, for the pain which follows a profuse bronchitis, a profuse expectoration, a profuse mucous secretion in the thousands of children that suffer that way, I have secured much more relief by the use of belladonna. I like it better than opium. The children stand it better, and there is not the danger in using it.

In pneumonia, frequently belladonna is preferable to opium. These cases, of course, like those for the use of opium, must be selected. I think it is impossible to say on the history of a case whether this one should have opium, that one balladonna, or vice versa, but the symptoms must be taken up and the condition as we find it in each individual case must govern our action. Unquestionably there is some use for opium in gastric disturbances. When properly used it is a very valuable drug, but when used indiscriminately and without some judgment it becomes a very dangerous drug.

Dr. H. Brooker Mills, Philadelphia: I was interested in Dr. Griffith's recommending the use of opium in some cases. In the recent epidemic in some cases where the opisthotonos was so marked that the patients could not swallow, and also in other cases where the restlessness was extreme, nothing seemed to produce relaxation and quiet them like a quarter of a grain of opium in the form of morphin given hypodermatically.

Dr. Griffith, closing: I have nothing to add, except to emphasize what I have said. I do not believe the profession should be influenced by prejudice in this matter. We are disposed to be guided too much by the opinion which prevailed ten or twenty or thirty years ago. We unhesitatingly use other dangerous remedies where we know they are beneficial, and nobody contends we should not do this in the case of children. The same thing applies to opium, the susceptibility of which one hears is greatest in the first few months of life, and after that diminishes rapidly. There does not seem to be any danger when the drug is given with the susceptibility in view and in the proper dosage. We lose a very valuable remedy if we do not use opium where the indications arise; and we do harm when we give it in wrong dosage and in unsuitable cases.

THE INFLUENCE OF PRENATAL CARE ON INFANT MORTALITY*

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In every country in Europe work for the protection of infancy and maternity has been greatly increased since the present war began. The decrease in the birth rates and the fear of an increase in the infant mortality have contributed to this interest; especial concern for the protection of maternity has received a remarkable impetus since the war broke out. Infant welfare stations under different names are being established in all the countries, and at many of them prenatal care is being carried on. Prospective mothers are given instruction and advice in prenatal hygiene, as well as medical supervision and care. In all the countries where some system of maternity insurance was in force at the outbreak of the war, this has been continued in the face of some difficulty.

In England and Wales, as elsewhere, the birthrate has fallen markedly. The infant mortality rate, as giving evidence of the success or failure of all their preventive measures, has been watched with great eagerness, and to everyone's satisfaction it reached, in 1916, the figure of 91 per 1,000 births, the lowest for any year on record. In Scotland it has fallen to 97 per 1,000 births.

In Germany the government assumed the burden of maternity benefits for the wives of soldiers who would not otherwise receive benefits from the health insurance societies, and these were increased over benefits previously paid.

In France, especially in Paris, the medical protection of mothers before, at, and after confinement has never been so good as during the first five months of the war.

In Belgium, Dr. W. P. Lucas reports that there is no question but that, during the war, more is being done through the Red Cross for the mother and child than was ever done before.

The importance of the campaign for the reduction of infant mortality is realized by us now more than ever before, as we have entered the war and are facing a diminishing birth rate. Those who have studied the causes of high infant mortality rate, have gradually come to see that marked progress is to be made only through the prevention of sickness in infants. Evidently prenatal care must begin with childhood, especially at the period of adolescence in both sexes. Recent efforts to safeguard child labor, to inform boys and girls concerning the dangers of venereal disease, and to provide proper food and hygiene for youth, must be at the foundation of such endeavor. Good wages which will permit early marriages, abolition of tenements, and the substitution of model houses are all of importance.

When we realize that, through public health work, the death rates from typhoid fever, tuberculosis, diphtheria, measles, diarrhea and enteritis have steadily decreased, and that the deaths during early infancy and the puerperal state have gradually increased during the last ten years, we know that it is time for definite action. The mortality among infants in Pennsylvania during the first year of life is over 25,000, or 21.8 per cent. of the total mortality of all ages and from all diseases. Forty per cent., or over 10,000 of the deaths in the first year of life, occur in the first month, and almost two thirds of these deaths occur in the first week. One third of all deaths under one year are due to premature births, malformations, and convulsions, and 80 per cent. of these deaths occur in the first month. It is evident that improper food or feeding is a negative factor in these deaths. The lives of most of these infants were uninfluenced by conditions arising after birth.

It is impossible to estimate the number of abortions and miscarriages, but it has been variously estimated at about 10 per cent. of the pregnancies or about 22,000 a year in Pennsylvania. Disease, financial conditions, work, nationality and intelligence are some factors influencing the number of these deaths.

Dr. J. Whitridge Williams has studied 705 fetal deaths which occurred in 10,000 consecutive admissions to the obstetrical department of the Johns Hopkins Hospital. The most striking features of the investigation are that (*a*) syphilis was by far the most common etiologic factor concerned in the cause of death, presenting an incidence of 26.4 per cent.; (*b*) toxemia, including eclampsia and nephritis, which is usually regarded as the condition *par excellence* which can be influenced by prenatal care, was the cause of only 6.5 per cent. of deaths and consequently was accountable for one fourth as many as syphilis; (*c*) notwithstanding the most painstaking investigation, the cause of death could not be satisfactorily explained in 18 per cent.; (*d*) dystocia caused 17.4 per cent. of the deaths. The demonstration that syphilis is a very important factor concerned in the production of fetal death, makes it evident that it must receive consideration from those interested in prenatal care. Unfortunately it is not an easy task to combat its effects. What is necessary is to recognize the disease in the mother at the earliest possible moment, and then subject her to appropriate antisyphilitic treatment. The treatment is simple, but the difficulty lies in making the diagnosis.

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* Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

In preventing prematurity, prenatal care and instruction offer great possibilities. In her visits to the home of pregnant and overworked women, the prenatal nurse can prevent many premature labors by giving instruction in personal hygiene, insisting on rest and abstention from excessive work during the later months of pregnancy, and where imperfect nutrition is manifest by putting women in touch with appropriate agencies for relief. It has been established beyond peradventure that one of the most potent causes of premature labor and the birth of poorly developed children comes from overwork and poor nutrition in the last months of pregnancy.

For a practical illustration of what can be accomplished in a prenatal clinic, we can look to Boston as the pioneer in this country. From April, 1909, a committee of the Women's Municipal League of Boston has in five years given prenatal nursing to 1,512 women in Boston. The results have been truly remarkable. Not one death occurred among these mothers during pregnancy, and but nine maternal deaths at confinement (0.6 per cent.) in full five years. In the last three and a half years there have been no miscarriages. There were sixty cases of threatened eclampsia the first year, two the last year. Only four cases of real eclampsia have developed during this five-year period. The stillbirths, including premature births, were for two years less than half that of the rest of Boston's infant deaths. (Total number of deaths under one month of age 43, or 2.8 per cent., while Boston's rate in 1913 was 4.8 per cent.) Percentage of breast-fed babies was 84.7 per cent. After this five-year experiment, the committee rests satisfied that prenatal care, by the nurse visiting in the home at intervals of not over ten days, has demonstrated its efficiency.

We see then that prenatal care will first produce a greater proportion of live-born, full-term babies.

The second important result of prenatal care is that babies of supervised pregnancies are somewhat above the average in weight. In the work of the Boston Committee, the average weight of the babies of supervised mothers was 7 pounds, 11 ounces, and this average included the premature babies. This gain of from four to eight ounces is a distinct advantage to the baby.

The third point is that prenatal care increases the number of breast-fed babies. The result comes from the fact that the mother is better fed during a supervised pregnancy, her health is conserved, and she has improved obstetrical and postnatal nursing.

The nursing side of prenatal care is already quite widely in operation. Recent reports, made to the Children's Bureau of the U. S. Department of Labor, show that agencies in at least 260 cities are carrying on this work. On the medical side of prenatal care, many and serious problems arise.

In Pennsylvania there were, in 1911, 210,000 births, 35 per cent. of which were attended by midwives, 15 per cent. by hospitals, dispensaries and maternities, 5 per cent. without attendance, and about 45 per cent. by physicians.

The great question of how to place really scientific, medical and obstetrical care at the disposal of all pregnant women in the country is yet almost entirely unsolved. Midwives have existed over the whole world, practically throughout all time, and it is more than likely that the midwife will be with us for some time to come. One of the great arguments against the midwife is that she cannot give prenatal care, that the women do not call on the midwife soon enough for her to give it if she were prepared to do so.

Proper obstetrical care implies not only prenatal care, not only care at the time of labor, but supervision of the mother when she is nursing her child. That cannot be done by ignorant women, you cannot train them to do it, and the only hope of getting that type of work is to have proper supervision. We should have throughout Pennsylvania the same supervision of midwives that has been carried out in Philadelphia and Pittsburgh. The matter of prenatal care, care at the time of labor, and postnatal care is not simply a matter for the obstetrician; it is altogether composite work for obstetrician, the pediatrician and for the visiting nurse. These three have to unite and we have to make use of our obstetrical dispensaries, lying-in hospitals, children's hospitals and then the various baby-saving agencies for the next year or eighteen months.

There are many difficulties to overcome, but probably prenatal work is more important and encouraging than any other form of social work.

Dr. Arthur B. Emmons, 2d, of Boston has suggested a constructive program for those who wish to promote prenatal work, which is: (1) For each township or city district a local committee of from fifteen to twenty enthusiastic women. Such an organization has proved highly successful in New Zealand. (2) Form a plan of the work. (3) Make a study of the already available means, as: (*a*) medical society to furnish an obstetrician; (*b*) district nurses' association; (*c*) milk station; (*d*) charitable organizations; (*e*) churches on a broad basis of human interest; (*f*) hospital beds for dangerous cases. (4) Become familiar with the literature of: (*a*) a National Children's Bureau; (*b*) New York Milk Committee; (*c*) Russell Sage Foundation; (*d*) State Agricultural College; (*e*) Women's Municipal League of Boston, Committee of Obstetrics and Prenatal Care; (*f*) Transactions of the American Association for the Study and Prevention of Infant Mortality, and through them many other helpful hints. (5) Estimate the needs of the individual community. (6) Form a finance and publicity committee. (7) Solicit the cooperation of the Women's Municipal League of Boston, Committee of Obstetrics and Prenatal Care. (8) Obtain literature for distribution to prospective mothers who may be able to read.

Examples of the literature are: "Prenatal Care," "Birth Registration," "Baby Saving Campaigns"—U. S. Children's Bureau.

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DISCUSSION

Dr. Lida Stewart Cogill, Philadelphia: To me this subject of prenatal care is one of the most important in medicine; to a certain extent it forms the basis for the future strength, vigor and efficiency of our nation. Some weeks ago there was a very good editorial printed in the *North American* entitled "Babies and Battles" in which it said, "What if we do win the war if we continue to lose our babies?" Another writer has said, "What government will hold the balance of power a generation hence even though we gain the victory if we do not do intensive child welfare work now?"

We find that England has been doing very extensive child welfare work even though they are at war, and has succeeded in reducing the mortality rate among her babies from 110 per 1,000 births in 1915 to 91 per 1,000 births in 1916. France was able by very intensive work to reduce the infant mortality to 20 per cent. in 1916 from a mortality of 30 per cent. the previous year, but they had an organized association which looked after all important matters in regard to the welfare of the babies, providing proper food, care and nursing (commandeering milk when necessary so that there would be an adequate allowance for babies and nursing mothers); the result is that they have stronger babies, the weight increasing about 15 per cent.

Miss Julia Lathrop, chief of the Children's Bureau, Washington, D. C., says we know very little of what Germany is doing, but reports show that they lay great stress on the importance of nursing mothers remaining at home in place of being gainfully employed, and their statistics show that the death rate of babies, whose mothers were gainfully employed away from home, was 227.5 per 1,000 births, while that of babies whose mothers remained at home was only 91.7 per 1,000 births.

How does our country compare with foreign countries? We find that out of 13 civilized countries we stand third highest in the question of infant mortality; that of eleven states and the District of Columbia, Pennsylvania stands third highest; and out of our large cities, over 300,000 in population, we have Washington the highest with 111 per 1,000, Pittsburgh with 110, Philadelphia with 104, and New York with 99. Of all the cities in the United States, Newburyport, Mass., has the lowest with 17 per 1,000 births.

We must do better than this in the United States; we must do something to bring down this percentage. When we think that in the last seventeen years we have lost 250,000 mothers, this means 15,000 mothers per year, due to conditions incident to childbirth, and that at least one half of these deaths could have been prevented by proper care and nursing; and when we stop to consider that this is more than the total number of soldiers slain on the battle fields during the Civil War, and when we find that each year there are more mothers, between the ages of 15 and 45 years, dying from conditions due to childbirth than from any other disease in the United States except tuberculosis; and also find that 10 per cent. of the babies born in 1916 died before they were 1 year old, it certainly should make us feel we have not been doing our best for mothers and babies. The blame must largely rest with the physician; we must bear this burden because we know that fully 25 per cent. of these lives could have been saved had intensive child welfare work been done.

I am pleased to know that Pennsylvania has created a committee on public safety and, as one of the subcommittees deals with the child up to school age, we doubtless shall have a great improvement among this class of children during the coming year.

But how are we going to lessen this unnecessarily high infant mortality rate? In connection with the question of midwives we find in Philadelphia County there were 2,000 less cases delivered by them during the past year than during the previous year and yet the maternal mortality was not reduced. Evidently, then, we cannot place too much blame on the midwife for this mortality.

As there were 438,000 premature births in the United States in 1916, one of the first things we must do is to raise the enthusiasm of the physicians over the necessity of increased prenatal work. We must have a proper birth registration of all living and stillbirths; all births, whether legitimate or not, must be reported, birth registration to be made within forty-eight hours in place of ten days after birth as now is the rule, so that the municipal doctors, nurses and social workers can get these cases earlier for the postnatal care.

We should also consider maternity insurance so that mother and infant may be assured of proper care and attention during the lying-in period. We should have the establishment of a greater number of maternities and health centers all over the country; every county should have at least one maternity hospital and numerous health centers with a visiting nurse; as some one has said, as broadcast over the country as our rural postal delivery.

We find that maternity mortality is greatest in the rural districts; one of the reasons for this is because of the distance of the patient from doctor or maternity, whereas if there were a maternity hospital in each county there would be less difficulty in transferring the patient to this institution in case of necessity, and thereby the lives of many mothers and babies that otherwise might be lost will be saved.

Cities should be divided into obstetrical zones with numerous prenatal and postnatal clinics in each zone, and patients should be advised to attend clinic or to go to the hospital in the zone nearest their homes, thus lessening the likelihood of their not attending a clinic because of the great distance; this will also enable us to prevent overlapping in our work.

I believe the postpartum treatment is fully as important as the antepartum or prenatal. It is certainly necessary to pay great attention to the pregnant woman up to the time the baby is born and it is surely just as important to pay strict attention to the postpartum period; we can thereby lessen the number of cases of subinvolution and much can be done during this period to overcome displacements of the uterus, such as retroversion, etc., thus decreasing the liklihood of miscarriages and premature births resulting from such cause. To repeat, a mother should be watched the following eight weeks after the child has been born as carefully as during her pregnancy: of course the postnatal or health clinic is equally as important to the baby.

If we all decide to cooperate with each other and do the best we can during the coming year to increase the amount of prenatal work done I am sure our mortality rate, both maternal and infant, will be decreased. Let us resolve that if hard, intensive child welfare work on our part will enable us to rank with Newburyport, Mass., whose infant rate is only 17 per 1,000 births, then it shall be done.

Dr. William N. Bradley, Philadelphia: In the organization with which I am connected we have been doing prenatal work for three years, and I am informed that during the past year 100 per cent. of the babies delivered under our care have been breast fed.

Dr. J. P. C. Griffith, Philadelphia: I would like to ask Dr. Miner to tell us something about prenatal care in Germany, where I understand they have a wonderful system.

Dr. J. D. McLean, Philadelphia: In the discussion here this afternoon it is not so much a question of prenatal care as it is the care of the father and mother before marriage. As we know, at the present time the United States Government is formulating rules and regulations controlling the zones surrounding the camps that are going to be very positive. The controlling of the zones around camps may mean the controlling of venereal diseases and, after all, controlling the one disease, syphilis, which, according to Dr. Miner's statement and the statement of Dr. Cogill, is responsible for a great many deaths. Is it not possible that the control of zones around camps means extension of control of these diseases into the cities and eventually from the cities into the whole country? The control of the extension of syphilis means the lessening of the death rate of babies. I will introduce a resolution in the House of Delegates which, we hope, will be extended into every state society in the United States, and we hope that the state societies will endorse the action of the United States in the control of these venereal diseases, and finally in the control of the one disease, syphilis, that is responsible for the large death rate.

If I had time I could read you extracts from statements made by the Secretary of War that would give you an idea of the importance of this problem. I will quote one in which he said that the zone around the camps where these boys are going to be will be controlled, and if the authorities do not control the situation, they will take the camps away. The fathers and the mothers of the boys who are sent into camp are writing letters every day to the authorities asking them, "Will you take care of my boy? I have taken care of him at home; you have taken him away from me; you are submitting him to temptations. The care that you take of him is going to affect my grandchildren."

As Dr. Cogill said, we have not been doing our best for the mothers and babies, and the blame must rest largely with the physician. The medical profession in the past has objected to the proper official control of venereal diseases. Let us be sure that it does not continue. I think we have arrived at the point where we are going to control these venereal diseases, and by force on the part of the United States Government.

Dr. H. C. McKinley, Meyersdale: I believe the doctors are much to blame. I have been practicing medicine for a little over fifty years, and incidentally I did a lot of things in my earlier practice that I would not do today. I believe in education.

I will give a certain instance: A young lady came into my office for treatment for a certain trouble, menstrual function, and I told her to come to see me the next day and bring her mother with her. She came and brought her mother and sister, and I gave them a very open lecture. I found that the mother was ignorant of many things a wife should know.

I told those two girls the consequences and the results that would come from the method of life that they were living. I believe that too many of us do not talk enough to the mothers; we do not take the mothers into our confidence and talk to them as a father ought to talk to them, and also as he ought to talk to his daughters. I believe they ought to be instructed early in life and be given an education in regard to this sexual function and the propagation of the human race, as well as its protection. It seems to me that it is advisable to begin at the bottom and educate them up to a proper understanding, and when you have done that, you will have fewer of these abortions and still-births, and fewer deaths when you tell your patients just exactly what they ought to do. I find far too much ignorance among mothers and daughters expecting to be mothers, and this prenatal care should be given as instruction and as treatment.

Dr. Miner, closing: I did not wish to put the blame on the midwife, because I know, and I have no doubt you also know very well, that the midwife's results compare very favorably with the general practitioner, but it would be difficult to have a midwife give prenatal care unless there is more careful supervision, and in order to have proper supervision we will have to have an increased appropriation.

I do not know whether there is enough money now to carry on the Institution of Midwives that was created in Philadelphia and Pittsburgh. We find that in the other counties it is very difficult to secure any careful control of the work of the midwife. We should commence, if possible this year in every county, some work along these lines. It seems to me it would be better to work through some already organized charity or hospital or social service work. In Luzerne County we have a very efficient Visiting Nurses Association, and to my mind it would be better to organize and work through that already existing charity, or possibly through the hospitals.

THE MANAGEMENT OF DIFFICULT CASES OF BREAST FEEDING*

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When physicians give as much study and thought to breast feeding as they give to artificial feeding, it will be only a short time before almost all infants will be breast fed, at least until they are six months old. We believe, therefore, the thing most needed is the education of physicians, or better still the education of future physicians (medical students), in the science of the natural feeding of infants, a subject now very largely neglected. Why not teach students more thoroughly the conservation of natural feeding? A difficulty to be corrected is the too common neglect by obstetricians to explain breast feeding in detail to their patients. When obstetricians fulfil their duty in this matter, pediatrists will have comparatively few difficult breast-feeding cases to handle.

Of first importance in dealing with difficult cases of breast feeding is that the physician gain the confidence of the mother. It is necessary if success is to be obtained.

Encouragement must be given to all nursing mothers. In many cases encouragement is all that is needed by an anxious mother who fears that she has not enough milk, or that her milk is too poor in quality or deficient in quantity to nourish her baby.

The successful management of not a few nursing mothers requires that the physician be thoroughly informed in the subject of psychotherapy. The common type one meets in difficult breast-feeding cases is the apprehensive mother. There is no doubt that fear is a powerful check to milk production. In many cases this fear is started in the mind of the mother by a remark made by an untactful physician, who not unlikely is himself ignorant of the fact that practically all mothers have the ability to nurse their infants.

If the breast-fed baby fails to gain in weight regularly, it should be examined with care to see if there be any underlying cause, such as syphilis, pyelitis or adenoids, or if it be due to bad hygiene, such as lack of fresh air or overclothing. If there is reason to believe that the trouble is a deficiency in the quantity of the breast milk, this can best be determined by weighing the infant immediately before and after every nursing over a period of twenty-four hours. Such weighings are commonly called "test feeds."

I believe physicians are apt to depend too much on the report of a chemical analysis of the breast milk. Many babies, however, thrive on milk which from analysis is shown to be deficient in quality. Personally, I do not put much stress on the analysis of breast milk; as a matter of fact, I find each year I have fewer samples analyzed and, when I do so, it is usually done for the purpose of being able to reassure the mother that her breast milk is "perfectly normal." Too frequently do we obtain a history that the doctor had the breast milk analyzed and found it was so weak that he advised weaning.

For practical purposes one may disregard the composition of breast milk and consider simply the amount which the baby is able to obtain. The one great factor in determining the quantity of breast milk produced is the strength and regularity with which the breast is nursed. This is a truth often overlooked, with the resulting failure of breast feeding, and yet a condition which under almost all circumstances can be complied with. When the infant does not suck vigorously the proper procedure is to have the milk expressed from the breast immediately after each nursing. This stimulates the secretion of milk, and the milk thus obtained may be fed by bottle or dropper to the weak infant.

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* Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

The breast-fed baby should be taught not to suck just the nipples, but to grasp as much as possible of the areola when nursing. This causes the breast milk to flow more freely and is also an excellent preventative of sore nipples.

There is little doubt in my mind that the greatest mistake which has been made in the past has been the general use of too short an interval between feedings. However, the lengthened interval between nursings is rapidly coming into vogue. An infant nursed at four-hour intervals is freer from symptoms of indigestion, has a better appetite and sleeps more regularly than the infant nursed every two or three hours. The nursing mother also finds by adopting the longer intervals that she enjoys better health.

Generally speaking, the diet of the nursing mother should remain the same as she has been used to taking before she became pregnant. The disregarding of this fact is one of the most common errors made by young mothers. Her friends and relatives try to insist that she take this food or that drink, and in attempting to carry out this free advice she is generally overfed, with disastrous results to her health. On the other hand, it is frequently necessary to disabuse the mother's mind that her diet must be restricted and that many foods affect adversely the breast milk and make the baby sick. For instance, one commonly hears that the mother has been advised to take no fruit, whereas in almost all cases, fruit can be taken with advantage by the nursing mother. Most babies are not affected by the foods which their mothers eat, but it is also true that there is a small percentage of babies who are unfavorably affected by certain foods when eaten by the mother. For instance, an intelligent patient observed that every time she ate ice cream the baby would a few hours later begin to regurgitate its feedings, and the stools would contain fat curds.

If the physician is uncertain as to which of the foods taken may be producing the adverse symptoms, it is well to exclude the ones which are most frequently to blame, as certain raw fruits, and some vegetables, such as onions, cauliflower, cabbage, peppers, radishes, pot herbs, and other highly seasoned food. When conditions are favorable, that is, when the bowel movements are again normal and the baby is comfortable, the diet may be increased by the addition of some one of the forbidden articles, and after a few days' observation, if no bad effect is observed, another one may be tried.

The nursing mother should receive food rich in calcium, such as cheese, milk, yolks of eggs, spinach, beans and peas. A diet containing from 2,500 to 3,000 calories in twenty-four hours is the best. While if less than 2,000 calories are taken the maternal tissues will be drained. Because obstetricians frequently order a vegetable diet during the last months of pregnancy nursing mothers sometimes continue on this inadequate diet, with the result of an insufficient milk supply or impairment of health.

If the baby has difficulty in nursing, its throat should be examined for the presence of some abnormality, especially for adenoids. I have found on frequent occasions, even in very young infants, masses of adenoids obstructing the nasopharynx and making it very difficult for the baby to nurse. It is possible to remove a large quantity of this material easily with one sweep of a curet, without the use of an anesthetic, and with great relief to the baby.

When the infant does not take a sufficient amount as determined by the "test feed," and by the fact that the baby is not gaining in weight, additional nourishment must be given. The method of alternating breast feeding and the bottle is not advisable. In order to increase the quantity of breast milk it is essential that the interval between nursings be not longer than four hours. In addition to the four-hour interval, absolute regularity in feeding must be insisted upon. The best results are obtained, in my opinion, when the baby is nursed only five times a day, at 6 and 10 a. m., and at 2, 6 and 10 p. m. Therefore, when the quantity of milk is deficient, it is best not to omit any of the regular feedings, but to give the artificial food immediately following each nursing. In order to determine how much of the artificial food to give, weigh the baby before and after several nursings to find out the average amount of breast milk which the baby obtains. It is then a simple matter to calculate the additional amount of food it requires in the bottle.

The formulæ of the artificial food must vary with the age, size and digestive ability of the infant. It is here that an analysis of the breast milk may be of some help. For instance, if the breast milk has a very high fat percentage, the artificial food to be given should contain a low percentage of fat. It is strange to me why physicians relatively seldom advise mixed feeding. I have found it very satisfactory, even when carried out over a period of many months' duration. Physicians frequently take the extreme position that babies ought to be either breast *or* bottle fed, and seldom breast *and* bottle fed. When an infant is fed both the breast and the bottle, it is well, as soon as the baby takes the bottle willingly, to use a very slow nipple, otherwise the baby will grow to prefer the bottle to the breast, as he is able to obtain the milk with less effort from the bottle.

Vomiting is a frequent symptom for which a physician is consulted, the vomiting being attributed to the breast milk, which in reality is seldom at fault. Vomiting is commonly due to too frequent nursings and to improper handling of the infant. The mother, for instance, turns the baby over a great many times in dressing it, when it is only necessary to turn the baby over once in putting on its clothes. It is an almost daily experience in hospital practice, to have infants brought for admission with a history that "they vomit every feeding," and then to see the vomiting cease immediately on admission without any special treatment having been given.

When an infant obtains the breast milk too quickly this can be easily corrected by the mother if she will compress the areola with her fingers, placing the first finger above and the middle finger below. In this way she can regulate the quantity of milk the baby receives.

Colic is another frequent symptom brought to the attention of the physician. Breast-fed infants with slight colic are often relieved by simply turning them over on their abdomens, or by some warm application applied to the abdomen, such as a spice bag, and then if not relieved a simple enema may be found effective. Babies with persistent colic are helped by diluting the breast milk. This is done by giving warm water or barley water in a nursing bottle immediately before each feeding. The quantity of diluent may vary from one-half ounce to four ounces, depending upon the age and condition of the baby. Two to five grains of sodium bicarbonate may be added to each bottle of the diluent, or if there is a tendency to constipation five to ten drops of magma magnesiæ may be added instead of the sodium bicarbonate. Sugar should not be added to the diluent.

The vast majority of nursing infants who have colic, or vomiting or diarrhea are suffering from overfeeding. A vicious circle is started by the improperly trained baby crying to be picked up and carried. This is wrongly interpreted by the parents as hunger, and the baby is given the breast every time it cries, consequently being fed at short irregular intervals, with resulting indigestion and more crying, and so on and so on.

When the baby is gaining in weight, irrespective of vomiting or diarrhea or colic, the proper advice is not to wean the baby but to continue breast feeding.

If for any reason, such as the temporary illness of the mother, it is necessary to discontinue the nursing, a determined effort should be made as soon as the mother's condition permits, to reestablish breast feeding. The mother's opinion that she has no milk is not sufficient, the physician should examine the breasts and determine if a little fluid can be expressed from the nipples. The baby should be put to the breast five time a day at the regular feeding time before giving it any other food, as it will then be most hungry. When this effort to reestablish lactation is continued conscientiously, the large number of cases in which the result will be successful, even after a number of days of artificial feeding, is surprising. Whether or not results are being obtained can best be determined by the repeated use of the "test feed." Of course, supplementary feedings must be given until the milk is secreted in sufficient quantity, as determined by this test.

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DISCUSSION

Dr. Theodore J. Elterich, Pittsburgh: Dr. Carpenter's paper is an important and timely one. The management of breast feeding of infants, especially during the early weeks, does not always receive the careful attention on the part of the physician which it demands. I would particularly emphasize what Dr. Carpenter has said regarding the weaning of young infants for totally inadequate reasons, when by proper restriction and supervision of the diet of the mother many digestive disorders can often be averted and usually easily remedied. Probably one of the most potent factors in the production of digestive disturbances in very young babies lies in the indiscriminate feeding of the mother during the early puerperal period. Often, and I might say as a rule, she receives twenty-four hours after delivery a full tray of meat, potatoes, vegetables and sometimes even salads. During the early lacteal period the active principles of vegetables, etc., are apt to be eliminated through the milk, causing pain and discomfort in the infant as well as the mother. Colostrum contains almost six per cent. of proteins while the later milk has only 1.25 per cent. to 1.50 per cent. A high protein diet, therefore, with absolutely no exercise will most assuredly increase this particular element to such a degree as to cause digestive disturbances in the infant to a less or greater degree. Many women have difficult labors and they are in practically the same condition as following a major operation. Why, then, should they receive a full diet? I usually insist on a liquid and semiliquid diet during the first week or ten days after delivery.

Dr. Harry Lowenburg, Philadelphia: So much Dr. Carpenter has said deals with points that I had the pleasure of bringing out in a paper I read before the American Medical Association about three years ago, that I find myself in hearty accord with most of his statements. So important do I believe the facts which he has emphasized that I think a propaganda should be made out of the contents of his paper. Some means should be taken to see that these facts should have wide circulation, not only among the profession, but among the laity. I believe such a paper as Dr. Carpenter has presented here should be issued, not only in the medical journals, but in some of the popular magazines.

There are a few points on which he has touched to which I should like to refer. It has been my experience that one of the most difficult things to overcome in reference to the successful accomplishment of breast feeding is the psychic element with reference to the mother. Dr. Carpenter well said that the average physician dealing with this problem should be a psychotherapeutist, and to my mind those words express the situation exactly. The mother who either will not nurse, or thinks she cannot nurse, is one of the greatest obstacles, and one of the greatest problems that we have to combat in the successful establishment of breast feeding.

Formerly I showed no spirit of compromise to these women, but I find in dealing with this problem that we have to be practical and handle it as a human proposition. Formerly I exhorted these women, plead with them, and flatly refused to do anything for them when they either thought they could not nurse or they would not nurse, but I have found in the past three years that once a woman conceives the idea that she cannot or will not nurse, sooner or later she will proceed to artificial feeding that is mismanaged, and in the circumstances I believe that we are often justified in substituting well-managed artificial feeding. Thus this psychic element may constitute a really important, if not the most important, contraindication to breast feeding. Dr. Carpenter referred to the use of breast pumps. These women cannot be regarded as machines, and in this respect this psychic element enters very largely. We cannot for very long continue to withdraw a woman's milk with a pump and feed it to her baby through a dropper. It is unnatural. You will soon find you will have on your hands a nervous, hysterical woman, whose milk will be of no use, and unless the milk can be made to flow freely from the mother's nipple into the baby's mouth, I believe these other means of accomplishing it will ultimately fail.

I must add that my experience is not in accord with Dr. Carpenter's, that mixed feeding is a success. I find, sooner or later, when once artificial feeding is inaugurated it will soon displace the breast entirely. In my experience babies do not gain on mixed feeding.

I believe that a great deal of this responsibility in reference to successful breast feeding rests with the obstetricians. They are very quick to put infants on artificial feeding, and frequently the food is condensed milk or some other unsuitable food, and I believe the propaganda should be directed with intensive efforts toward the education of the obstetricians, the average physician, and the laity.

Dr. Lida Stewart Cogill, Philadelphia: I would like to know from Dr. Carpenter if he advises feeding every four hours. We used to feed every two hours, and if Dr. Carpenter thinks that every four hours is better, I would like to know it.

Dr. J. P. Crozer Griffith, Philadelphia: In corroboration of what Dr. Carpenter has said, I desire to emphasize the very great importance of weighing the infant systematically in every case where the gain of weight is not satisfactory. This ought to be done, however, during more than twenty-four hours. Two days would be sufficient, weighing the infant before and after each feeding, and then totaling the amount at the end of each twenty-four hours, to see what was the daily quantity of milk ingested. It is not so much the amount which is taken at a single feeding, but the daily amount taken during these two days, or more, which is to be our guide. An analysis of the milk is of little value, unless we determine the amount taken. Having, however, determined this, it is well to discover by analysis whether the breast milk is too weak, or sufficiently strong.

This leads up to the other question, namely, the frequency of feeding. And I would like here to utter a word of warning against any endeavor to establish a fixed rule for the intervals to be followed. This has been well pointed out by Drs. Morse and Talbot of Harvard University in their valuable book on infant feeding. In some cases the breast secretes, or the infant takes, but a small amount at each feeding, and in these the intervals must be shorter. In others a large amount is taken, and the intervals may then well be longer. I think that, as a rule, it is not the short intervals so much as the too large amount which is disposed to produce vomiting. It has been well shown by physiologists that the normal breast-fed infant's stomach is empty within one and one-half to two hours after the ingestion of a meal, and that it is, therefore, ready to take another meal, should this be desirable. In very many instances the breast holds too small an amount to permit of a four-hour interval being followed. In others a four-hour interval is better. It must be an individual matter entirely. My own general rule has been and still is that it is well to feed the infant every two and one-half to three hours during the first three months; and I based this on the long, satisfactory experience of myself and other pediatrists, as well as on the physiologic data to which reference was made. It is a mistake, however, to promulgate any fixed rule about it, and especially to teach the laity this. The laity has very little discretion in the application of medical methods, and many an infant will receive too little to eat, if people get the idea that every child is to be fed on a four-hour basis.

Dr. S. McC. Hamill, Philadelphia: I would like to say one word in corroboration of what Dr. Griffith has said. This problem appears to me to be very much a problem for the individual child, an individual matter; the matter of feeding is an individual problem. I think this the best paper I have heard on this subject.

Dr. Carpenter, closing: In answer to the question of Dr. Cogill's, as to the question of the four-hour rule, that is only a rule to be used in a general way. I would say that I agree with what Dr. Griffith has said, that it is not well to have an invariable rule in connection with this matter, but that each child has to be dealt with individually. If a child does not take a sufficient quantity at each time, then it is necessary to feed more frequently.

CONSTITUTIONAL DISTURBANCE OF TOXIC GOITER AS INFLUENCED BY SURGICAL THERAPY *

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It was with some hesitation that I chose as a topic for a paper before the surgical section certain aspects of the goiter problem. It would seem as though the subject had been well-nigh exhausted from the surgical point of view, but to my mind this is far from the truth. I am quite prepared to concede that the essential points in the technic are thoroughly understood and that a method of surgical procedure has been elaborated which may be regarded as acceptable to the surgical profession. But there are many other phases of this fascinating and many-sided subject still unsolved and matters of debate. So large are the opportunities of the surgeon for observation, so many toxic goiters come under his care, that he is placed in a position of obligation to the general field of medicine which he cannot well avoid. It is incumbent on him to make some contribution to one phase or another of what I regard as a most perplexing problem. How little is known today of the function of the thyroid, even though surgeons have been removing them by the thousand! How many physicians still question the propriety of operating for toxic goiter and assume a skeptical attitude as to the reported results of surgical interference! It is my own belief that the present status of surgical therapy is but a stepping-stone in the development of some method of arresting the toxic functional disturbances of the gland, and that eventually other measures, perhaps nonoperative, will be forthcoming that will deal with the cause rather than the effect of deranged function, and by removing the cause break the vicious circle.

The toxic goiter is one of increasing importance because of its continually increasing incidence. In the community in which I practice, the simple goiter, so-called, without toxic manifestations is infrequent and, relatively speaking, seems to be no more common than ten or twenty years ago. But the toxic goiter is brought to my attention in increasing numbers with each successive year so that it is now almost a daily experience. My experience with the surgical treatment of goiter comprises a series of 245 cases, of which 173 have been of the toxic variety. There have been, all told, 221 operations including 182 lobectomies and 39 ligations. The large majority of this series have been treated during the past three years.

Although the majority of toxic goiters have many symptoms in common, by a more careful analysis one finds certain peculiarities which enable a subdivision into groups. Thus there is the adolescent type, where the enlargement represents a hypertrophy which so compensates for the demands made on the thyroid that the evidences of intoxication may be at first trivial and operation may for a while be deferred. Later on, however, the adolescent type may become extremely toxic, and in young girls from 16 to 19 years of age is, in my experience, the gravest form with which one has to deal. Preliminary ligation in these cases is not so effective as in other types.

A second group is met with chiefly between the ages of 30 and 40. The patient has had an adenoma or simple hyperplasia for a number of years, sometimes since adolescence. The intervention of certain factors, be they physical fatigue, nervous exhaustion, an incidental infection, or as in many cases child-bearing, transforms a benign into a toxic state. In this connection I want to call attention to tonsil infections as an important factor. A careful inquiry will often bring out a history of repeated attacks of tonsillitis, and the treatment should include either before or after the thyroidectomy, the removal of the tonsils. The prognosis of surgical therapy in this second group, when the operation is performed at a comparatively early stage, has been, in my experience, most favorable both as to operative mortality and as to the end results.

The third group is composed of those which are, from the beginning, toxic, the thyroid enlargement appearing about the thirty-second year, and in a few months there appear the evidences of toxicity in the picture of exopthalmic goiter or Graves' disease.

To this classification may be added a fourth group, in which may be included any of the

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* Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 27, 1917.

toxic varieties of comparatively long duration. Often both lobes are involved to such a degree that little normal thyroid tissue remains and the patient presents a clinical picture of what may be called *dysthyroidism,* analogous to dyspituitarism, when associated with signs of hyperthyroidism are those of hypothyroidism. The possibility of permanent relief in these cases, after any form of treatment, may be despaired of and the beneficial effects of operation are often not striking and frequently of transitory duration. These patients must be regarded as hopelessly invalided.

I want to refer to two minor groups of cases where the propriety of operation is questionable. The first is represented by the patient, a woman, with a small adenoma and a group of nervous phenomena that characterize the patient as a neurasthenic. The physician has labored with the case many months and as a last resort attributes the nervous phenomena to the thyroid involvement. On two or three occasions I have been overpersuaded to operate and the outcome has not been gratifying. With careful pre-operative study of such cases one should be able to avoid this pitfall.

The second group of cases is more puzzling. It is characterized chiefly by tachycardia and an inconspicuous enlargement of one or the other lobe. There may be no other positive evidence of thyrotoxicosis than the acceleration of pulse. I know of no way in which one can differentiate the tachycardia of thyroid origin from those due to other causes. In my own series about half have been benefited by operation and half have not.

The gradation of toxicity based on clinical phenomena alone can be made only with a large and varied experience and even then the results are only approximate. Recent studies of the basal metabolism in thyrotoxicosis would seem to offer a more exact method of determining the degree of toxicity. It has been observed that in addition to the well recognized clinical features of the toxic goiters a rise in the general heat production or the basal metabolism practically always occurs. According to Means and Aub,[1] not only is it a constant factor but one of the most striking and characteristic features of thyroid overactivity. It is not necessary to discuss the method of determining the basal metabolism. Suffice it to say that it is one of indirect calorimetry and is determined with Benedict's respirative apparatus. As a result of their operations, Means, DuBois and others have elicited the interesting and significant fact that the rise in basal metabolism furnishes an accurate index of the degree of toxicity or hyperthyroidism and may be regarded as a functional test of the thyroid gland. This contribution to the function of the thyroid gland appeals to me as of more than scientific interest, and with the cooperation of Dr. Jonas of the William Pepper Laboratory of Clinical Medicine I am subjecting all my cases of toxic goiter to this test before and after operation, not only to determine the degree of toxicity as an index of the operative risk and as a guide to treatment, but as a means of determining the ultimate effects of the operation.

In our clinical investigations of the deranged function of the thyroid, I urge the importance of bearing in mind the possible relationships of the thymus gland. I say possible, for as yet I have not been able to confirm the evidence of those who have made some very convincing contributions. Experimentally it has been proved that reduction of thyroid tissue causes atrophy of the thymus and hypertrophy of the thymus bears some relation to hypertrophy of the thyroid. Clinically, some extraordinary results of the relief of the symptoms of hyperthyroidism have been reported as following a partial thymectomy. In thirty-six autopsies in cases of exophthalmic goiter, at St. Thomas' Hospital, London, the thymus was enlarged or hypertrophied in sixteen, greatly enlarged in six, and persistent but not large in four. Those are very telling facts and demand our attention.

A very important factor in the management of the toxic goiter is the choice of operation. The mildly toxic cases need give one little concern as there are no contraindications to an immediate lobectomy without preliminary ligation. Whether or not an operation is justifiable at all in these moderately toxic cases might be said to be a disputable question, and while operation cannot be said to be imperative, the progressive nature of the disease, the likelihood of the mild case becoming grave, the freedom from risk in the early stages of the disease, the advantages of operating before any organ is permanently deranged—these and other reasons constitute a substantial basis for early operative intervention.

Turning now to the graver forms of toxic goiter, we are at once confronted with a problem. These cases are all hazardous, and whether one should begin with fractional ligation or undertake a lobectomy at the start is a decision that cannot be made with precision. The graver risks of course are the true and primary exophthalmic types, but the transitional forms, the adenomata or the simple hyperplasias, may be just as grave. Those in the earlier stages of the disease, without great loss of weight, without marked gastro-intestinal disorders, with a high rather than a subnormal blood pressure, without a high lymphocytosis and without mental instability, are better operative risks than those of longer duration, with a low blood pressure, with marked vasomotor disturbances and with failing compensation. In the former group occasionally a lobectomy may be justified as the initial step of the treatment, in the latter under no circumstances should one attempt more than a ligation.

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[1] Jour. A. M. A., July 7, 1917.

A vital question in the surgical care of toxic goiters is the selection of the time for the lobectomy after initial ligation. How long should the interval be? In my clinic it has been our rule to discharge the patient after a ligation of two vessels either at one or two sittings, and to instruct the patient to return for observation at the expiration of two months. Usually there will be a gradual improvement for about two months after ligation, and while the improvement may continue even to recovery in the exceptional case or may remain stationary, as a rule there will be relapses at the expiration of this time. If the secondary lobectomy is postponed beyond a definite period, not to exceed in the average eight weeks, the danger of the secondary lobectomy is quite as great as though the primary ligations had not been performed. When the patient for one reason or another does not return for several months or longer after ligation, the case must be treated as though the preliminary ligation had not been performed. Two out of three of the fatalities in my series was the result of nonobservance of this injunction. In these cases, when the toxicity is extreme, an attempt should be made to reduce the toxicity by rest, injection of boiling water and by ligation of the inferior poles, assuming the superior poles were ligated at the first operation, before the secondary lobectomy is ventured on. The improvement which follows ligation must be due in larger measure to the section of the sympathetic fibers than to any disturbance of the blood supply. The vascular supply of the thyroid gland is so abundant from other sources that the closure of two of six vessels could not interfere very decisively with the gland's function. Ochsner advocates the regular horse-shoe incision for ligation, because he believes ligation of the poles will be more effective if the large veins anterior to the gland are ligated at the same time. I have had no means of substantiating this point of view as I use short incisions, following a course in the neck directly over the superior poles. The pole is double clamped including the blood vessels, nerves and thyroid tissue, bisected, a ligature mounted on a curved needle encircling the central and peripheral segments of the poles.

Of the immediate results the mortality in my series of operations on toxic goiters has been 3.5 per cent. In a series of 1,415 cases assembled from the reported records of Ochsner, Judd, Porter, David and Dowd, the mortality rate was the same. All told I have had six fatalities, three following ligation and three following lobectomy. In each of those following ligation the condition was desperate; two of these patients operated on five years ago were in the terminal stage of the disease, and today I would consider them inoperable. The third, a male subject, was an extremely acute case; the patient died within twenty-four hours of a ligation of one superior pole under local anesthesia. Of the three deaths following lobectomy, two were in patients who returned after preliminary ligation had been performed, failed to return at the prescribed time, two months, and after a brief period of improvement had suffered relapses. I have already referred to the risks attending lobectomy under such circumstances. The ligation performed as preliminary to lobectomy in these cases, should be ignored and preparatory treatment begun anew.

As to the effect of surgical treatment on the constitutional disturbances of thyrotoxicosis, I will refer to three of the more important groups, the nervous, the circulatory and the nutritional. Using my cases as a criterion, I find that the effect of the operation is most telling on the nervous phenomena, that is, a larger percentage of patients will be relieved of the nervousness, irritability and sleeplessness than of the circulatory or nutritional disturbance. Next in order of sequence follows the improvement in nutrition. Most of these patients are twenty to thirty pounds under weight and a great many will regain what they have lost and many attain a weight beyond the maximum of their previous state of good health. The effect of the operation on the circulatory disturbance is quite variable and depends in large measure on the condition of the heart at the time of operation. Usually, however, cardiac compensation will be restored and palpitation subside. There are many instances, however, when the patient seems restored to a state of health approaching the normal with the exception of the tachycardia. This, in my series, is the most persistent symptom. The tachycardia may not be extreme, the pulse rate may average but 90, but under stress of excitement or active exercise it mounts more rapidly than under normal conditions. As a matter of fact, however, while the pulse rate is above normal the patient is in every other way fully recovered and comfortably able to resume his or her previous activities.

Not only is relief afforded by operation, but the percentage of relapses is directly proportionate to the amount of tissue removed. How much tissue should be removed? Generally speaking, less gland is physiologically required in the old than in the young, and the nearer the menopause the greater the proportion of glandular tissue may be removed. If but one lobe is involved it should be removed in its entirety, but as a rule both lobes are affected and my tendency has been to increase the extent of the resection so that not more than one sixth of the total amount is conserved. Porter writes that the removal of five sixths to nine tenths, so far as he knows, has not been followed by either recurrence or hypothyroidism, and according to Judd the results bear out the impression that if the patients are not cured it is because enough of the gland has not been removed.

As to the percentage of so-called cures, my results correspond to those published from other clinics. The term "cure" is used in this connection in the sense that the patients are transformed from a state of invalidism and incapacity to a state of health and activity which enables them to resume their customary duties. A moderate tachycardia, slight nervous disorders or excitability may persist under certain provocations, but the patient, when questioned as to the results of the operation, expresses satisfaction. With these restrictions we record a cure in 70 per cent. Of the remainder, some will be moderately improved, others not at all. The cause of failure is not the plan or character of treatment but as a rule the advanced stage of the disease. As bearing on the effect of operation and the end-results, I have but a word to add in conclusion. No matter how intelligently the surgical management of the case has been executed, satisfactory end-results cannot be obtained without quite as intelligent management of the after-treatment. If the latter is not carefully carried out relapses will be more frequent, and the surgeon is dependent on the cooperation of the family physician. It has been our practice, on the patient's discharge, to send to the physician a suggestive outline of after-care. The patients must be protected as far as possible from unnecessary physical or nervous fatigue, and to this Ochsner adds the importance of rather rigid dietary regulations on which he lays great emphasis.

To quote from an earlier communication, toxic goiter belongs essentially to the domain of surgery, recognizing, of course, certain exceptions. To equivocate in this general assumption at the present time, and in the light of surgical accomplishments, is not admissible. The "nonsurgical" treatment of the toxic goiter is attended with a higher rate of mortality, and, among those supposedly cured, on the patients' return to their normal habits relapses are indeed frequent. Add to this the inevitable complications which follow delay—disturbances of nutrition, permanent organic damage to the structures of the heart, the kidney, the adrenals, the exhaustion of the nervous system, the exophthalmos and possible loss of vision, the inevitable incapacitation in, if not actual abandonment of, occupation or everyday life work, and we have an array of facts which justifies a positive stand in favor of surgical, as compared with nonsurgical, management of the disease.

DISCUSSION

Dr. Walter Lathrop, Hazleton: To those of us who have had an opportunity to study hyperthyroidism, the picture presented by the toxic goiter is one not easily forgotten. In no class of cases do we find such a chain of symptoms showing equal regularity in their mode of onset or appearance. The nervous tension is great, the apprehension of some calamity is often present. The muscular tremor is seldom absent in severe cases, while the pulse, rapid, irregular, or intermittent, testifies to the cardiac stimulus of toxic origin. The eyes may or may not show signs of exophthalmos. The thyroid may or may not be enlarged. Digestive disturbance is more or less common, especially the periodic diarrhea seen in so many cases with exophthalmia. The common causes of hyperthyroidism are usually overwork, worry, grief, apprehension, or infections, these following a history of heredity in many cases. Wilson, of the Mayo Clinic, has made many extensive studies of the pathology of these cases, and he has said that in the gland of these toxic cases is found advanced colloid changes, with scattered areas of hyperplastic tissue, and he states further that the thyroid of a patient who has developed the disease slowly and presents little exophthalmos, shows diffuse adenomatosis, or multiple adenoma.

In the treatment of the toxic goiter, the first element of success is rest. The patient should have careful watching, regular medication, regular feeding, and all possible sleep. Blood pressure should be recorded frequently. Tincture of digitalis is the best drug in our experience. Calcium lactate and quinin hydrobromid is very valuable. When the patient is deemed fit for operation then it must be decided which is best to do, a lobectomy or a ligation. Each surgeon must decide for himself. Our experience has been in favor of thyroidectomy, but the work of many experts would seem to favor preliminary ligation. We believe that by means of rectal anesthesia the gland can be stolen away and the patient not know it, and after operating on over four hundred consecutive cases of goiter, under colon anesthesia we are convinced that it offers the best means of all in cases of high strung, nervous, apprehensive people. The after-care is important; proctoclysis for several days is often of value; strophanthin, hypodermatically, is very useful in excessive heart action. The value of the ice bag must not be forgotten, as it is one of our best aids to convalescence. Often after ligation no further treatment is required, but if it is necessary, then the lobectomy should be done in three to five months.

PUS INFECTIONS OF THE ANO-RECTAL REGION *

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A discussion of the pus infections of the ano-rectal region naturally resolves itself into a discussion of the causes of anal and rectal fistulæ since these are so often the sequelæ. It is notorious that pus accumulations in this region of the body do not clear up as they do in the other parts, and it is our purpose to present some of the reasons for the failures and to give a method for their prevention.

As to the etiology of these infections Wallis states: "Abscesses in connection with the rectum originate with rare exceptions from an infection of an abrasion of the last part of the rectum. The statement that the majority of these abscesses originate from an infection of a chronic abrasion has been arrived at, after investigating a large number of cases."

Kelsey says, "To account for the entrance of these microbes we must concede, besides infection through the ordinary solutions of continuity to which the mucosa of the rectum and anus are liable, the possibility of infection through the lymphatics without solution of continuity."

Lynch says, "Ischiorectal abscesses result from traumatism, skin infection, fissure in the posterior commissure, abscess in the triangular space as a result of infection in one of the other spaces around the rectum, perforation of the anus by foreign bodies, ulcerated hemorrhoids or cryptitis."

Swinford Edwards, who has most likely seen more rectal cases than any other living surgeon, says: "I am of the opinion that, in the large majority of cases, a fistula is due to an infective process proceeding from an ulcer or abrasion in the mucous membrane of the anal canal, hence in the majority of cases one would expect to find an internal opening; and this, in point of fact, is the case."

Tuttle, in his encyclopediac manner, states: "The cause of these abscesses is always direct or indirect infection. Puncture wounds and injuries from sharp bodies within or outside of the rectum may carry septic germs directly into the cellular tissue and thus produce abscesses. Ulceration of the crypts of Morgagni or of the rectum proper may result in the ischiorectal abscesses through direct extension of the ulcerative process or by infection through the lymphatics. The frequent cause, however, of the ischiorectal abscesses is infection through some lesion of the anal canal. These abscesses frequently follow operations for fistula, stricture, and hemorrhoids. In these cases it is supposed that they are metastatic. In two cases in which ischiorectal abscesses followed operations for hemorrhoids, upon opening the abscess cavity there escaped a considerable amount of decomposed or clotted blood along with thin seropus; it is supposed either the suppurative process caused rupture of the small vessels and hemorrhage into the fossa, or the vessels were ruptured by the traumatism necessary to dilate the sphincters, and infection occurred later."

Mummery says: "It is very probable that the course of an abscess is as follows: As the result of straining at stool, or of the passage of some hard substance, a small wound or break is made in the mucous membrane of the anal canal at the point of least elasticity, viz., at the "white line" or the sulcus between the sphincter muscles. This small wound becomes infected with pyogenic bacteria, which are always present, and the submucous layer is infected. This is the beginning of the formation of the abscess in the perianal tissues."

Our observations correspond with these and the internal opening of these abscesses or fistula is always at the "white line." The pus spreads rapidly in the areolar tissue and in

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* Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 27, 1917.

the fat spaces of the anorectal region, and since there is no deep fascia to limit its spread and the subcutaneous tissue is directly continuous with the fat in the ischiorectal fossæ, a collection of pus of large dimensions is rapidly formed. Later the abscess bursts either outward through the skin or into the anal canal or both. Healing, more or less rapid, of the main abscess follows, when the contents are expelled, but in most cases the line of communication between the bowel and skin persists as a fistula.

If these abscesses are properly treated when they first appear, they will generally heal, without the formation of a fistula.

Allingham's treatment of this subject was so extensive as to require a chapter in his book. It bears the caption, "Why Is a Fistula?"

What usually happens is that the abscess is allowed to reach too great a size before it is opened, and that it either bursts into the bowel at the upper level of the external sphincter muscle, or that these tissues between the abscess and the mucous membrane are thinned by pressure and suppuration, so as to render the subsequent formation of the fistula inevitable.

Abscesses of this region may also form in any of the spaces above or below the levator-ani muscle and the spread of the infection is from the break in the mucous membrane along the lymphatics.

Pyogenic bacteria in the blood stream may also localize in a thrombus in any of the hemorrhoidal veins. These veins are poorly supported in the fat spaces and areolar tissues, and easily rupture under strain. It is not uncommon to observe clots in the pus and in the debris which is evacuated from such abscesses.

There are three well-defined spaces above and three below this pelvic diaphragm. The spaces above are the right, the left and the posterior pelvic rectal spaces. The posterior space is separated from the right and left spaces by the two lateral ligaments of the rectum.

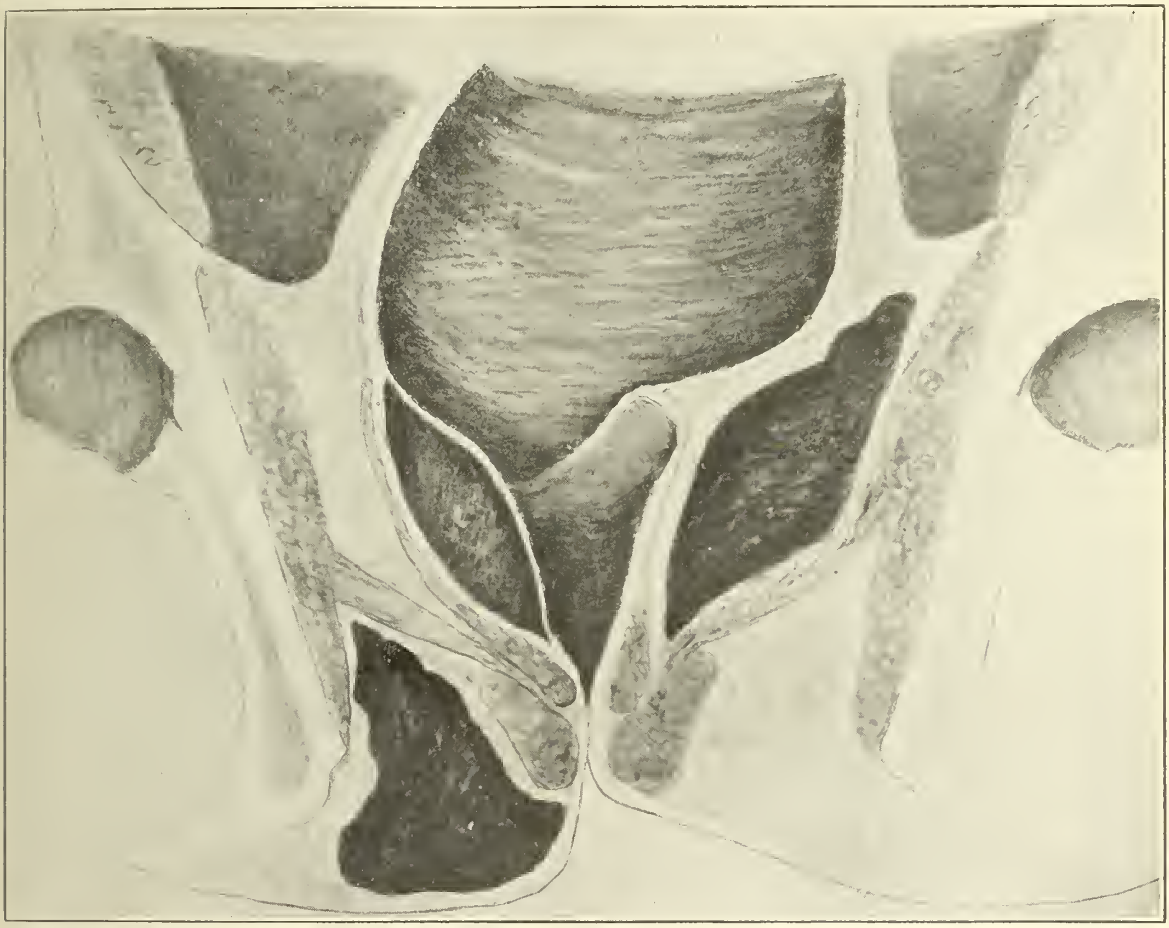

Fig. 1.—Sites of pus collections in the anorectal region; ischiorectal abscess below the levator ani muscle; superior rectal and submucous abscesses above the pelvic diaphragm. After Tuttle.

The spaces below the pelvic diaphragm are the two ischiorectal fossæ and the posterior anal space. These fossæ are the commonest sites for abscesses in this region. At their depth they are limited by the obturator fascia externally and the levator-ani fascia internally. Thus this kind of abscess is not compelled to extend toward and distend the skin until the whole ischiorectal fossæ is filled and the tension becomes very great. An infection of one fossa may extend to the other through the triangular postanal space. This extension from one ischiorectal fossa to the other accounts for the formation of posterior horse-shoe fistula. Abscesses arising in Cowper's glands in the male, or in the vulvovaginal in the female, are fairly common. They are attended by a great degree of pain since they are confined within the layers of the triangular ligament. These dense layers are ruptured only with the greatest tension and the abscess may rupture towards the rectum first. These abscesses are most likely the chief cause in the formation of rectal stricture. The offending organism in these abscesses is usually the colon bacillus. Streptococcus infections are not uncommon, and they may end fatally if proper measures are not instituted in time.

These infections are rare in children. In the Hospital for Sick Children in London, in ten years, only six cases of anal fistulæ were admitted for treatment. The majority of these were boys, there being but one girl in the series. This might give us a clue in searching for etiological factors. The rougher sports of boys, less care in their anal hygiene, and the rough seams in their trousers could be productive of lesions of these parts. The occurrence in adults is much more common with males than with females. In my own list of eighty cases, the number of male patients was over sixty.

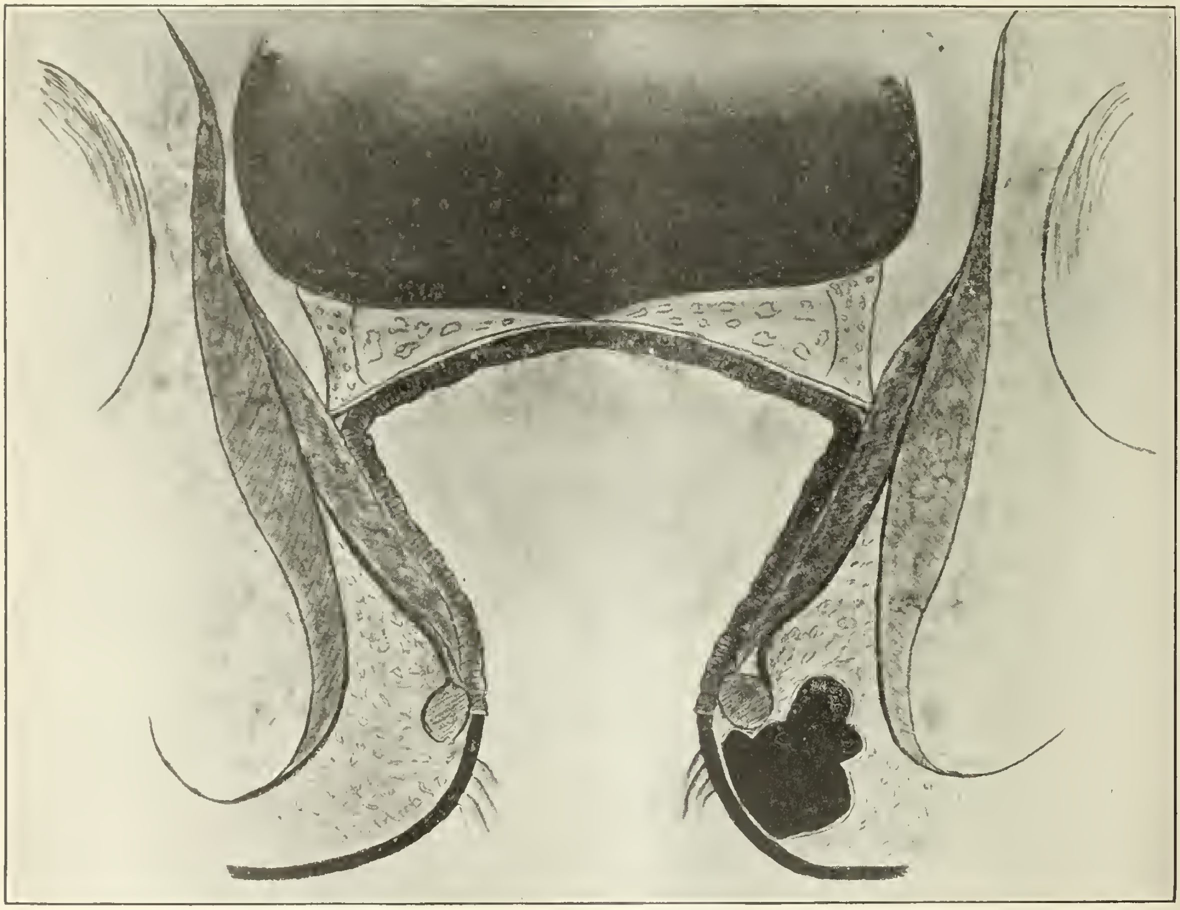

Fig. 2.—The beginning abscess in the isciorectal fossa, and its possible size with but slight external evidence; the proper time for drainage.

The diagnosis of an anorectal abscess is usually not difficult. They show themselves with some of the ordinary signs of acute inflammation, but not all, and they can hardly be mistaken for anything else. There is usually a chill and considerable constitutional disturbance. There is pain always, but redness and swelling are not seen until four or five days have elapsed and even these do not show externally if the pus focus is above the levator-ani muscle, that is, if the abscess is of the superior pelvirectal variety.

In all cases the digital examination gives the most information and is indispensable. By means of digital palpation one may compare one fossa with the other, or one superior space with its opposite, and in this way one may quite certainly detect induration or fluctuation.

The speculum has no place in the diagnosis. To introduce an instrument through the anal canal where an abscess is developing in the posterior anal space, or in one of the fossæ, is only to cause unnecessary pain and that without any profit. An entirely too exalted idea of the value of the speculum exists. It is quite unnecessary for ordinary examinations and the conditions, which cannot be detected by the routine examination, will not usually be discovered by the simple use of any variety of specula.

Everyone will agree that the only treatment for an abscess, in any position, is immediate drainage. In practice, however, these abscesses are seldom treated in this manner, since in their early stages they do not cause the ordinary signs associated with abscesses in other parts. They begin as do other abscesses just below the mucous membrane or immediately under the skin, but there is no external swelling until the size is very great. The peri-anal skin is thick and tough, and the abscess tends to burrow deeper in the fat than through the skin. The only signs of abscess present are pain and local tenderness together with some malaise and slight fever. If, when these symptoms are first complained of, a finger is passed gently into the anus and the fossæ or the superior spaces be palpated with the internal finger and the external thumb, induration will be felt and there will be tenderness. This is the stage at which the abscess should be opened, and if opened a subsequent fistula can be prevented. No swelling and very often no redness of the overlying skin can be seen. But these signs are quite sufficient to justify an incision, and the proper treatment is to give a general anesthetic, nitrous oxid preferably, make a curved incision one inch outside the anal aperture, and as long as the greatest length of the induration. A short drainage tube is to be inserted and stitched to the skin. It should not reach the bottom of the pus cavity, serving merely to keep the edge of the wound well separated, for free drainage.

It often happens that an incision at this stage will show little more than a slight discharge of seropus, but this does not mean that the incision was made too soon. If this treatment is carried out promptly and thoroughly, the infection will subside like any other infective process and a fistula be prevented. The common mistake made is to temporize for a few days, applying fomentations, hoping that the abscess will resolve or become sufficiently obvious to be opened early. This treatment will give relief and thus seems to justify its adoption. What really happens is that the abscess bursts within the anus or out through the skin, with complete relief of pain, and the doctor feels that this was the proper treatment.

The ultimate result, however, will almost invariably be the formation of a fistula, requiring a later operation for its cure. Wounds are not to be plugged with gauze, as it rapidly ceases to act as a drain. Nothing should be allowed to extend to the bottom of the wound, as very slight pressure on the bowel wall, weakened by the suppuration process, will push a hole through it, and complete the fistula.

The superior rectal infections should be treated in a similar manner, except that the incision must go deep, passing through the apex of the ischiorectal fossa and the levator-ani muscle with its fascia. It would be a comparatively easy procedure to open such an abscess through the rectal wall. Complete drainage would require the section of the sphincter muscles. It is very much safer to go through the fossæ and reinfection is thereby eliminated.

The submucous variety do not cause much constitutional nor local disturbance, and usually continue to increase in size until the mucous membrane ruptures spontaneously and contents of the abscess are seen in the stool by the patient. Perfect drainage is very essential with this variety. The normal contracted state of the sphincter muscles interfere with this, and to make it efficient the external sphincter should be sectioned at the point of election. Ordinary divulsion is not enough to accomplish drainage, and the danger of over-divulsion is best avoided by cutting the muscle.

There is usually a complete disappearance of all symptoms, when any of these abscesses have ruptured, whether externally or intrarectally. If the former condition has occurred, the skin opening should be extended and the drainage tube inserted: if the latter has happened, an incision should be made over the site of the abscess cavity and then treated as a complete fistula at the time, or after waiting 7 to 10 days until the acute infection has subsided. Immediate completion of the fistula operation probably does not shorten the convalescence, and it is safer to treat the fistula after waiting. It can usually be done quite satisfactorily under local anesthesia.

In the after-treatment of these abscesses we have been using the Carrel-Dakin technic as taught us by Dr. Sherman. It is our opinion that the healing time has been materially shortened by its use, both with abscesses and with fistulæ.

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DISCUSSION

Dr. Herbert B. Gibby, Wilkes-Barre: It has been my experience that every one of these cases have come to me in the acute stage. The majority of the patients come after a fistula has already formed. There is no doubt that trouble in this region is apt to be neglected by the general practitioner and the surgeon as well. It is not a particularly pleasant occupation making rectal examinations, and the majority of men, principally the general practitioner, are satisfied with prescribing an evaporating lotion and treating the condition in that manner. There is no doubt that early treatment in these cases will save the annoyance and trouble of a fistula, which practically never heals until it is relieved by proper operation. I have had no experience in the use of Dakin's solution in the treatment of these cases, but judging from the results obtained in other localities there is no doubt that it has a field here.

THE INTERRELATION OF APPENDICITIS, CHOLECYSTITIS AND PANCREATITIS *

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As far back as 1885, Pasteur had demonstrated the phenomenon that an infectious micro-organism, although having an identity whereby it could be recognized morphologically under the microscope, need not necessarily have the same identity, biochemically under all circumstances. It could vary so radically in this respect as to lose its pathogenic power altogether without any apparent change in its visible characteristics. It could also increase in virulence, become more pathogenic, and develop selective affinity quite different in its results upon different tissues according to its cultivation on various media at different temperatures and varying conditions of humidity. Accordingly, when dealing with a pathogenic organism of very reduced virulence, the latter is used as a vaccine, whereby antibodies are produced conferring immunity against infection by the more virulent form. This has explained in a measure the protective effect of vaccine against smallpox, of preventive inoculations against chicken cholera, hog cholera, typhoid fever, anthrax and tetanus.

In clinical surgery the streptococcus and staphylococcus are the micro-organisms which concern us mainly; the tissues are a most suitable soil for their development; they disintegrate the serum locally producing a toxin fatal to leukocytes and pus is the result. In preantiseptic days hospital gangrene and septicemia were of frequent occurrence. A suppurating wound was allowed to retain its pus and infecting streptococci; these under confinement increased in virulence. Exactly how this happens or what exactly is the chemical change, has as yet eluded the grasp of the biochemist, but the clinical fact remains that local gangrene would result, as destructive in its character as if the part had been treated with a powerful corrosive. Once this high infectious character was reached, it was a common occurrence to see an infection of similar virulence spread to other patients in the ward. This observation was clear enough to suggest the constantly varying virulence of the streptococcus until it assumed its most virulent type, inflammatory and highly infectious. The passage of streptococcus through the bodies of different animals also varies, notably its virulence. It remained for Rosenow to show that this is not only a fact, but that the various organs of an animal body considered as a culture soil could give the streptococcus an identity so special to a given organ, that, being inoculated into another animal of the same species, it would select that particular organ as a culture medium thereby reproducing the same disease in the second animal. We had already had a suggestion of such a possibility in the selective affinity of the typhoid bacillus for Peyer's patches in typhoid fever. We also know that these patients remain for long periods of time as typhoid carriers and are especially prone to gallbladder infections. It is true that gallbladder infections are the predis-

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* Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 27, 1917.

posing cause of gallstones and these in turn may react as an irritant on the gallbladder wall and light up a new acute infection. While this is often the case, it is more probable that the gallbladder becomes infected through the blood. The micro-organism lodging in the capillaries of the gallbladder wall, producing bacterial infection in the mucous membrane, produces a local area of necrosis. When we consider that in two thirds of people the common duct passes through the head of the pancreas owing to the union of the common and the pancreatic duct, it is easily understood how, should the common duct be obstructed below this union, there would be a reflux of infected bile in the pancreatic duct, setting up a pancreatitis. The infection may be so severe as to result in a peritonitis which on subsiding may leave intense adhesions of the gallbladder, pancreas and duodenal regions. The lymphatic glands about the ducts may enlarge from infection and by pressing upon the common duct induce jaundice.

Now that it is apparent that gallbladder infections predispose to pancreatitis, let us see where we are apt to trace the infecting element in cholecystitis.

The peculiar arrangement of the cecum in connection with the appendix, and the vagaries in the anatomy of the appendix make of this ileocecal and appendiceal region a favorite seat of infection. These may be said to be local breeding areas for the two types of infection most prevalent in the peritoneal cavity, namely, the streptococcic and bacillus coli type. These two infections produce symptoms of very dissimilar character but very recognizable to clinicians of some experience. Often they are mixed. The infection may start with the bacillus coli type and be complicated later with the streptococcus. When these infections start in a weak and nonresistant subject they progress rapidly, giving the acute form of appendicitis requiring immediate operation. Here the infection is removed completely or nearly so, before it has had time to produce distant complications. When, however, the local intestinal stasis has produced an infection of low virulence which assumes a chronic type, the streptococcus and bacillus coli may enter the blood stream in amounts unable to produce general symptoms, but which finding selective affinity for the gallbladder, because of their modification by prolonged culture in the appendix, nestle in the gallbladder wall and give the start to cholecystitis of an acute streptococcic or milder and chronic bacillus coli type. We therefore find a chain of infection starting in the ileocecal region from intestinal stasis; this is the focus of infection from which germs migrate through the blood or lymphatics to infect the gallbladder and thence, as shown above, the pancreas and probably the stomach and duodenum likewise, predisposing to ulcers in these regions. I do not assert that a primary infection of the gallbladder irrespective of preexisting appendicitis or typhlitis could not exist, but in my observation granted a cholecystitis, we are apt to find trouble about the appendix more or less acute, or showing evidence of a healed process by adhesions in the region of the cecum or appendix. How often have surgeons operated upon an offending appendix only to reopen the abdomen a few days afterwards for the removal of a gallbladder very much more affected than was the appendix. How often has a diseased appendix been overlooked at the operation for a diseased gallbladder.

Now that the etiology of these infections is better understood; now that their concomitance from interdependence of infections has been somewhat elucidated, we will consider it a reproach to our surgical judgment if these conditions are not recognized more frequently than in the past. In other words the patient has the right to assume that the surgeon has at one operation discovered the complete nature of his abdominal ailment by a thorough exploration, should the case warrant such an exploration without detriment. A downward incision through the right rectus muscle starting on the level with the umbilicus should be prolonged until access is gotten to the appendix. It should then be prolonged upward until the gallbladder is accessible to inspection. This procedure will furnish the minimum opening to the necessary exploration of both the appendix and the gallbladder. At one time there was a tendency to say of the gallbladder as of the appendix, "Once diseased, always diseased," and accordingly cholecystostomy gradually yielded to cholecystectomy whose perfected technic has rendered the operation very safe yielding operative results superior to cholecystostomy in selected cases. But the ever-recurrent query is, "Has the gallbladder any function of real service and therefore should it be retained when a cholecystostomy would restore its physiological integrity? The old objection to the removal of the gallbladder was that it prevented subsequent drainage to the common duct for the treatment of pancreatitis. I believe that it is now conceded that pancreatitis is produced rather as a result of a diseased gallbladder whose infected bile finds access to the pancreas. Should we recognize a gallbladder as diseased by its thickened white walls or containing gallstones, we may safely assume that no amount of drainage will restore the integrity of the diseased musculature and mucous membrane, and that therefore if retained it may be the subject of infection with subsequent pancreatitis. The adhesions which must result impair the function of the stomach and duodenum. My belief is that if the patient can safely stand the operation the gallbladder should be removed. If the gallbladder is large and highly infected, then it is best to drain with the prospect of removal at a subsequent operation. For it is risky to expose the peritoneum to a gangrenous cystic duct. I have seen a fatal peritonitis result from it. The only apparent risk from a cholecystectomy is the sudden call upon the bile duct to transmit a continuous flow of bile. Cholecystostomy may allow a shriveled and useless gallbladder to remain as a possible future source of infection, or else with such adhesions as may cause further reflex gastric symptoms.

Odi and Hendrickson have described a sphincter which exists at the extremity of the common bile duct, which seems to act in unison with the contractions of the gallbladder. Now when the gallbladder is removed this muscle seems to rebel and contract so as to dam the bile back and produce a dilatation of the stump of the cystic duct, as well as of the common and hepatic ducts. This has suggested that it might result in a pancreatitis, but clinically we know that the accompanying dilatation of the common bile duct soon overcomes the spasmodic contraction of this sphincter muscle of Odi and restores the continuous flow of bile.

A gallbladder can be judged diseased if the lymphatic glands along the cystic, common and hepatic ducts are found swollen. They can be palpated with the finger through the foramen of Winslow and a thumb over the duct. Of course, this statement does not solve the question, for eventually the rule of reason must prevail, a rule based upon the individual condition of the case and the surgeon's interpretation of it. Should time allow it I would relate a number of clinical cases which have led me to these views, but I am sure that similar cases now come to the minds of most of you and that you have felt the need of more radical measures. Enough, however, has been said as to the broad lines of action. When considering this whole question from a more recent clinical and pathological standpoint, we recognize in appendicitis a focal infection from which infectious elements may emerge to localize themselves whereever they find selective affinity, starting a new infection there, notably the gallbladder and subsequent pancreatitis. We find the after-effects of these infections either in acute manifestations or in obscure chronic conditions whose reflex symptoms may involve the stomach, prompting further disease there, or by inducing intestinal stasis promote further development of autotoxemias.

I am convinced that there would also be a vast improvement in the clinical symptomatic results approaching a cure of the patient by the practice here recommended. A word of warning is timely here, against too much reliance being placed on the negative findings of roentgen rays inasmuch as adhesions may be present resulting in much functional disturbance without their being detected by the roentgen rays and, being overlooked, a necessary operation may be omitted. Biopsy or the direct evidence only, can as yet serve the complete diagnosis. The surgeon should not be satisfied with less.

DISCUSSION

Dr. George W. Reese, Shamokin: The difference in micro-organisms, and particularly the selective affinity, proves that the veil is being penetrated and the fog is fast disappearing. The modes of infection have been given with such force and magnitude as to anchor them in our minds that we may interpret their true meaning. The facts are based not on the false objects of life but on the true one, duty, and the author's trained perception and mature judgment always make his conclusions valuable. The fundamental truths we have heard today possess the compass which will steer us aright.

The first case of localized appendicitis on record was one operated on and reported by Mestivier in 1759.

Dr. L. J. Hammond, Philadelphia: It is not easy to fix a place in this very full and completely presented paper where one can add materially to it, but I feel that it is perhaps admissible in such important matters as this to emphasize and even reemphasize facts. There is no doubt that we must keep ever in mind the importance of investigating carefully each and every intra-abdominal organ when it is found necessary to investigate any one. Their anatomic relation and physiologic performance make it well nigh certain that either is likely to affect the other. I therefore congratulate Dr. Laplace for having presented to us a subject that deserves our continuous thought and reflection. As to the question of the gallbladder, he is here, as always, very clear. His method of procedure in dealing with the gallbladder is very much as mine. I have felt that if we can demonstrate the existence of a perfectly healthy gallbladder, so evidenced by the absence of infiltration and thickening of the walls, it is wisest to leave it; when the reverse is demonstrable it is essential that it be removed without delay.

Dr. Laplace, closing: I would repeat the one point which I hope will loom out of the paper and that is that our ordinary incision for appendicitis be modified. I have a rather large experience in appendicitis; I have done over four thousand cases and, taking the point midway at the place where we are supposed to find the appendix, I have found it usually higher up than lower down. Therefore it behooves us to modify our incision, and I repeat, make a straight incision on a line with the level of the umbilicus, cutting down slowly until the appendix of that particular patient is found; if it is quite high up, cut until you reach it in that particular patient. When you are through with the appendix cut up gradually until you reach the gallbladder and that will be the minimum incision.

A REVIEW OF CERTAIN POSTULATES IN PELVIC SURGERY *

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Here and there as we review the subject of surgery we note the survival of statements, methods and axioms which have persisted since before the days of anesthetics or aseptic technic or soluble ligature material. It seems that no writer feels quite up to the occasion of throwing all of the old matter out, and so we run across time-honored statements and methods incorporated in modern literature which have been salvaged from a questionable past, which have the honor to have been commonly accepted as fact, but when subjected to the test of more modern knowledge, prove to be only the makeshifts that they were intended for and not substantial truth.

Every man who has developed a subject is willing at some time or other to stop and sum up his findings, when, if they prove satisfactory to him, he will state his conclusions. If he states his conclusions from a scientific basis they may be facts, but if he arrives at his conclusions hedged about by apparently insurmountable difficulties he postulates. If future conditions remove the obstacles his postulations may show a percentage of error and be subject to correction.

No one doubts that Emmet, for instance, knew the anatomy of the pelvic cavity, or belittles the methods that he devised to serve in his time, but he labored under the fear of infection and the lack of a soluble suture material that he could bury with impunity; therefore he went as far as he dared and postulated his findings.

Knowing the Emmet methods and the progression of additions to them up to the present day, let us consider a number of points unburdened by his particular disablements.

To expedite the subject I shall present a series of categorical statements for your judgment and ask that you conform your opinions from a knowledge of the actual anatomical relations of the parts which the operator never sees, and which the dissecting room rarely presents. I wish that you would in addition give the mechanics of the parts your serious consideration, and think in terms of altitude and latitude and longitude as we swing about the pelvic curves and produce a different method of pelvic orientation.

Let us consider pelvic surgery from the standpoint of a return to the normal relations, not attempting to gain our ends by a complication of the existing pathology of the parts, and above all let us consider the woman as being in the upright position with her pelvic viscera filling the pelvic cavity where the force of gravity sends them and not in some mysterious manner floating up into the abdominal cavity to the extent of their relational tethers. One should not train his memory in the position assumed by the parts, with the patient supine or with the coccyx higher than the symphysis, so persistently shown by the illustrators.

We should note one fixed surgical point in the pelvic floor where the perineal center should be; this is approximately 3 cm. below the pubic symphysis and on a plane with the mesial margins of the descending rami of the pubic bones. The dislocation and relocation of this point is the crux on which turns much of pelvic repair.

The bulbocavernosus muscle until destroyed has a function as a sphincter which may be restored by operation.

The transverse perineal muscles should be known as the tensors of the perineal fascia.

The extent and direction of retraction and atrophy of lacerated muscular tissue should be a point to remember while considering these structures when injured.

The structures of the vaginal tube are not the structures of the pelvic floor.

Repair of the vaginal coats or closure of its orifice is not repair of the pelvic floor.

A truly lacerated levator ani muscle is not susceptible to repair in a remote secondary operation but its fascia is.

The levator ani muscles have no function as a part of the passive retentive support of the pelvic floor but their fascia has.

Colles' fascia with the remaining layers of the triangular ligament and their contents provide the passive retentive force of the pelvic floor anterior to the anus and stand at right angles, approximately, to the

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* Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

plane of the vagina and are the important structures broken when pelvic support is lost.

Rectocele and cystocele are not primarily a ptosis of these structures but a disclosure of them by the descent and retrogression of the central part of the perineal floor after lateral laceration of it.

The anus being attached by means of its sphincter to the perineal center falls downward and backward with the perineal center after injury and would go forward and upward with it if it were replaced at its normal position.

That part of the pelvic floor, consisting of the triangular ligament, bulbocarvernosus and transverse perineal muscles, may be extensively torn laterally without a similar vaginal involvement.

Extensive laceration of the vaginal coats may occur without injury of the pelvic floor or perineal center.

Lateral laceration of the pelvic floor leaves the perineal center intact but displaced downward and backward. Central laceration of this structure splits it and displaces the two halves laterally but does not change its altitude materially.

Rectocele, vaginocele and cystocele after injury are only possible if the pelvic floor is split laterally *from* the vagina toward or into the ischiorectal space.

The normal line of gravity of the pelvic contents is back of the anus when it is in the normal position.

The normal vaginal orifice is not at the lowest depth of the pelvic cavity or in the line of descent of its contents.

For the pelvic contents to escape from the normal pelvis per vaginum they would have to move forward and upward, out of the line of gravity and against the law of gravity. The expulsive power of the abdominal muscles drives the pelvic contents coincident with the line of gravity, impinging first back of the anus, when if the bowel is to be emptied the levators relax dropping the sphincter and anus in the line of descent and expulsive force. The descending fetal head would drive through the same area were it not for its size, and the deflecting power of the sacrosciatic ligaments and their bone environment toward its normal exit, which opens backward and downward until the perineal center is behind the line of descent and the arc of the pelvic floor is shortened to the point where it allows the escape of the descending head normally or, resisting, is torn to allow the passage.

Hernia at the pelvic floor, after injury, occurs only when the perineal center falls downward and backward far enough to allow this point to coincide with the line of gravity of the pelvic contents.

Prolapse of the uterus after injury is a consequence of the injury but is only a part of the total pelvic ptosis and being the most mobile part of the contents may go the farthest where the means of descent is provided.

The uterus normally lies as deeply in the pelvic cavity as gravity can force it, held upward and forward by the pelvic fascia, levator ani muscles and rectum and forced downward and backward by the bladder, while its ligamentous attachments hold it centrally with its long axis in the plane of the pelvic curve.

The line of gravity of the uterus is with the pelvic contents and not toward the vaginal outlet unless injury has placed the outlet in the line of descent.

Ordinary closure of the vaginal outlet by denudation and mesial approximation only partially closes the outer door but does not change the line of descent.

The margin of safety between retention and expulsion of the pelvic contents is very much like that of tipping or not tipping a glass full of water.

Failure to replace the pelvic floor at its proper level has been the cause of the development of uterine fixation operations, all of which compound the pathology.

Repair of median lacerations require mesial approximation to restore the normal. Mesial approximation of lateral tears serve to elongate the sling of the pelvic floor instead of shortening it.

Lateral tears of the pelvic floor being outside of the vagina should be treated outside of the vagina, but the easiest route to them is through the vaginal wall.

Lateral tears should be treated individually and on the side where the tear occurred by a dissection from the vagina into the area involved.

The perineal center having been torn from its fascial attachment to the pubic ramus on one or both sides, it should be sewed back to that attachment on one or both sides where the injury has occurred.

The point of replacement of the perineal center should be approximately 3 cm. below the symphysis pubis and on a plane with the pubic ramus carrying with it the anus back to its normal location and restoring the normal pelvic depth, while placing the vaginal outlet in front of and above the point of impingement of gravity and intra-abdominal force.

To sew the levator ani fascia across in front of the rectum may serve to block the vaginal opening, but it complicates the already existing pathology, constricts the rectum and binds it and the normal perineal center in its vicious pathologic malposition.

If the edges of the levators can be easily found outside of the vagina it is plain to infer that they have not been seriously injured which is often the case, but if lacerated they should be treated laterally and individually at the same time that normal replacement is being accomplished.

I am of the opinion that attempts at repair of the recently torn perineum serve to close the superficial mucous membrane tears and rent of the vaginal coats but fail to approximate the deeper structures in most instances.

The attempt to reapproximate lacerated structures, such as occur in an injury of the vagina and bilateral laceration of the pelvic floor and which lie in different planes and run in different directions, by one encircling suture or line of similar sutures, is a physical impossibility. It is never attempted anywhere else but in the perineum, and one should go back to Emmet for authority as to why it should not be attempted.

To conclude, I believe that modern aseptic methods, with sterile soluble suture material, which can be buried with impunity, leaves no one the excuse for failure to see and carefully isolate the structures which he hopes to repair in the pelvic floor, and which he can reapproximate in situ, without appealing to a compounding of the existing pathology to gain his ends.

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DISCUSSION

Dr. George B. Klump, Williamsport: One thing Dr. Davies does not bring out is that most cases of perineal repair occur in the hands of the men who are doing obsterical work, and make primary repair at the time of close of labor. Those who do maternity work know that at that time the tissues are swollen, congested and turgid, and it is almost impossible to separate these tissues and to close them in his way. That perhaps is not an excuse for not doing proper surgical work, but it is an excuse that by closing these injuries we avoid infections. Many of these patients come to us later, and in these cases we may or may not have extensive tear of the vaginal surface. We may have relaxed perineum where the tissues have been torn. In that type of case it is comparatively simple to attack these tissues through the vaginal orifice, and we can approximate tissue to tissue. We have got to secure the fascia. But I would not like to go away from here with the feeling that the men doing the maternity work were not justified in making efforts at repair where they have injuries, though I doubt not, many of these cases come to us for later repair, and this does not of necessity mean that the man who had the case in charge should be condemned. Therefore in many cases where the patient says "I was not sewn up right," in cases of relaxed perineum it is well enough for the surgeon to suggest that it could not be avoided at the first operation before this secondary repair is done.

Dr. J. A. Ruben, Pittsburgh: I have enjoyed Dr. Davies' paper, principally because it gives me an opportunity to disagree with him on several points. We know that the three great muscular supports of the abdominal cavity are the diaphragm, the muscles of the anterior abdominal wall and those that form the pelvic floor. By a break in these muscular supports, we may have a diaphragmatic hernia, a ventral hernia, a pelvic hernia or prolapse.

In multiparous women, little or nothing is left of the small muscles that go to make up the urogenital diaphragm. On careful dissection, we find them replaced by fibrous tissue. These women depend on their levator ani muscle for pelvic support. When either one or both arms of this levator muscle is torn through during labor, we have the first requisite for the beginning of prolapse. The second requisite is the displacement backward of the uterus, so that the cervix instead of pointing toward the hollow of the sacrum, points in the direction of the vaginal outlet.

The cardinal points in any operation for prolapse must, therefore, be the replacement of the uterus to its normal position and building up a high perineum of voluntary muscle by uniting to a high level the two arms of the levator ani.

Dr. Davies (closing): I wish to thank Dr. Klump for his very kind discussion of my paper. He brought out the point that primary repair of the perineum is justified, but frequently not successful. He states that he says in such cases, "I have done what I could to produce a repair, but cannot guarantee a cure because of the frequent inability of the crushed and distorted tissue to again assume the normal by means of a primary operation." To so inform the patient is the correct attitude. We hear of obstetricians who claim never to get tears; these cannot be adequately dealt with, as is the case of the man who claims that he always primarily sufficiently repairs them. The man who closes them and tells the truth about the prognosis will last longest among those with whom he deals.

The second speaker apparently suffers from the condition which I attempted to describe in my opening remarks, being unwilling to go beyond the existing postulations and to indulge in an individual examination of the structure and mechanics of the parts so as to determine for himself what the actual facts are in the case.

I made the statement that the operator rarely sees normal tissue in these parts, neither is it seen frequently in the dissecting room, for the great majority of cases which are produced there are women with destroyed perineums, having little left on which to demonstrate normal structures or topographic relations. My observations have been confined principally to the normal living woman and my dissections have likewise been accomplished on the injured parts of patients while making the attempt to provide a normal repostion of the parts. Speaking of the levator ani, he referred to it as the "big levator," which if dissected in situ will frequently be found to be a sheet of muscle not much larger than the platysma, often composed of separated fasciculi of muscle fibers which could not be used alone with any success to provide a reposition of the parts.

The condition should be treated from a mechanical standpoint, and by the application of a knowledge of normal topographic anatomy, the first point of which is a knowledge of where the perineal center should normally be, consequently a knowledge of where you should replace it. In the operations which I have done it has been possible for me to carry this point forward and upward to immediately below the external urinary meatus and there attach it, which being the case I have been able to deflect the pelvic contents from the vaginal outlet backward and downward into the pelvic cavity where they normally exist.

HOARSENESS: ITS RELATION TO LOCAL AND GENERAL DISEASES *

J. HOMER McCREADY, M.D.
PITTSBURGH

Voice is such an important adjunct to a human being that any alteration in its quality causes great annoyance not only to the individual affected, but to mankind in general. By hoarseness I mean any alteration in the quality of the voice, whether in tone or force.

The laity, and I am sorry to say many physicians, do not appreciate the value of early attention to hoarseness. Entirely too little stress is laid on this subject by the teachers in our medical schools; the laity are not educated to realize the seriousness of this affliction, and the physicians treat many of these patients by sprays, cold tablets, etc.

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* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

We all know that many serious and embarrassing after-effects could be avoided if more alarm was felt about hoarseness. Of course the blame does not always rest on the shoulders of the busy physician, but in most cases on the neglectful patients themselves. It is really the exception, save probably in singers and tubercular subjects, for patients to seek medical attention before weeks and months have passed since the initial onset. Then it is really because some other symptom has developed or talking is an effort. The case is regarded as just a strain or a simple cold.

Time will not allow nor do I propose to take up all the varieties of voice alterations and their etiology. We all know that patients can have hoarseness from a deflected septum, hypertrophic and atrophic rhinitis, polypoid growths in the nose, purulent sinusitis, adenoids, diseased tonsils, etc. I do not wish to dwell on these local conditions, but on the more remote cases. The acute cases, such as laryngeal diphtheria, retropharyngeal abscess, acute laryngitis, etc., can readily be diagnosed from the other types by the sudden onset, temperature and other general symptoms. To make it brief I wish to deal only with some of the more serious and chronic forms.

We have a child with a husky cry, slight cough, perhaps as time goes on a little dyspnea, crowing inspiration with crying. The mother will probably inform you that these symptoms have been present since a few days after birth. We make an examination of the nose, nasopharynx and pharynx and find them negative. A direct laryngeal examination is made and except probably for a mild congestion of the cords, the larynx is also negative. There is no distinct external glandular swelling. We have a radiograph taken of the chest and find a shadow above the heart showing like a cap over the large vessels. A large thymus gland is revealed. Many of these cases get well without treatment. I have seen quite a few that required a tracheotomy. Operation on the thymus itself in my experience often results rather seriously. Here the first symptom usually noticed is the husky cry. If an early diagnosis is made and the patient given intelligent roentgen-ray treatment, the prognosis is certainly much more favorable. The second class of cases are children with multiple papillomata of the larynx. You get a history of hoarseness extending over a long period of time, with various degrees of dyspnea. Usually all kinds of diagnoses have been made and all kinds of remedies have been tried. Before the invention of the direct laryngoscope, laryngeal examination in a young child was almost an impossibility, consequently many of these cases were fatal or not diagnosed until a tracheotomy was performed. Having made a direct examination and you see a papillomatous mass, the procedure that I usually follow is immediate tracheotomy. It is far better to do a planned tracheotomy than an emergency one. The papilloma can then be removed by the endolaryngeal route by as many subsequent operations as necessary and with very little danger.

On the other hand, multiple papillomata in adults do not require a tracheotomy nearly so often as the same condition in young children.

To me the most interesting cases are those that present a fixation of the arytenoid cartilage or the arytenoid misplaced forward, backward, to the left or to the right. It immediately flashes through one's mind, has the lesion that caused the arytenoid condition been a local one within the larynx such as might have resulted from an abscess, ulceration, a perichondritis from typhoid fever, diphtheria, syphilis, etc., or is it from pressure on the recurrent laryngeal nerve due to a large goiter, a large mediastinal gland, a large cardiac or aneurysm, thickened pleura, or, again, is the lesion central. Indeed how very common are all of the foregoing causes. Are we to make a laryngeal examination and, finding no active local lesion, tell the patient one cord does not approximate properly, probably nothing serious and let the case rest there? I am sorry to say that is what happens in a great many cases. On the other hand, are we going to put the case squarely up to ourselves and the patient and say that it may take quite a long time to make a final diagnosis and require the services of one or many consulting physicians? Many serious complications can be avoided by the proper handling of these cases. As an example I wish to cite the following case.

A male white, aged 31, occupation, a steam fitter, did not have the usual diseases of childhood, although he says that he had an attack of measles at the age of 22. He had been exposed to several diseases, but denies any gonorrhea or venereal sores. He had a rash on body at the age of 24 years. Voice has been weak and husky for the past three years. Two weeks before I saw the patient he experienced difficulty in swallowing solid food; this condition gradually grew worse and the first time I saw him he was swallowing liquids with the greatest difficulty. He had felt more or less discomfort on swallowing for the past year; and had lost 30 pounds in weight. From the beginning of his hoarseness three years ago until the present time he had consulted between twenty and twenty-five different doctors, general practitioners, internists, tubercular experts, pathologists, roentgenologists, etc. He had taken all kinds of medicine and used all kinds of sprays. He said that no one had ever been able to make a diagnosis.

When he presented himself for examination he was emaciated, disgusted with life and had about lost all faith in the medical profession. Inspection revealed a pronounced prominence of the left clavicle and scapula; it looked as though there must be a large mass in left apex pushing these structures outward. There was atrophy of muscles of left side of neck. Closer inspection showed also atrophy of left side of tongue. Aural examination showed the hearing in left ear almost destroyed. Hearing was almost normal in right ear. Laryngeal examination showed total fixation of left vocal cord. Esophageal examination by means of the Jackson direct esophagoscope showed the upper part of left wall of esophagus pulled to the right.

As the patient was having great difficulty in swallowing liquids, I decided to admit him to St. Francis Hospital and thought, with perhaps the cooperation of the various members of the staff, I could make a diagnosis. A gastrostomy, to prevent starvation, looked imminent. Roentgenologists reported negative chest findings; internists, nothing in lung to account for condition; surgeon and neurologist both suggested a central lesion; ophthalmologists reported very little change in fundus. As the patient told me he had had two negative blood Wassermanns, I decided to have spinal Wassermann done. Laboratory reported a two plus Wassermann with cholesterin. Taking all the other symptoms into consideration and finding the plus spinal Wassermann, we decided it was a large gumma of the cerebellum. Patient was immediately given 606 and internally the house specific, consisting of bichlorid and potassium iodid. The patient soon showed marked improvement in swallowing and at the end of six weeks was discharged from the hospital. Of course the laryngeal fixation still persisted.

This case demonstrated how difficult it is sometimes to make a diagnosis, the value of team work and above all the value of a spinal Wassermann; also hoarseness being the first sign of a central lesion, and the serious complications that developed from improper treatment without a proper diagnosis.

Fixation or twisted arytenoid is most often seen in tubercular patients, due to pressure on the recurrent laryngeal by enlarged tubercular glands. While often seen in the acute type, it is indeed very common in the healed cases. I have seen a few hundred such cases in my tubercular work and the laryngeal picture always aroused my curiosity as to the exact location of the pressure focus. We must remember also that in tubercular cases, hoarseness is one of the first signs of incipient pulmonary tuberculosis and also in active pulmonary cases hoarseness many times marks the onset of laryngeal tuberculosis. Cardiac dilatation hypertrophy and failing compensation very frequently causes a fixation or a faulty approximation of the vocal cord.

In adults past the age of 45 more or less persistent hoarseness demands the closest scrutiny. If a mass no matter how small is seen within the larynx it should be removed immediately and examined microscopically. If found to be malignant a laryngectomy or hemilaryngectomy should be performed as soon as possible. Most of these cases usually advance beyond the operative stage before a diagnosis is made. Tracheotomy on the first sign of dyspnea usually prolongs the patient's life six months to a year. Radium should always be tried in conjunction with your other treatment. Although I have failed to mention many of the etiological factors in hoarseness I will feel satisfied if I have succeeded in emphasizing the following points: (1) always given a guarded prognosis, (2) impress upon yourself and the patient the importance of an early diagnosis; (3) use the direct laryngoscope in making a laryngeal examination in children and infants; (4) in hoarseness and dyspnea in the young, with negative finding on inspection, keep in mind thymus gland; (5) impress upon the general man the importance of sending the cases early to a laryngologist; (6) call upon your colleagues in the various branches of medicine to assist you in solving the difficult cases; (7) remember the "arytenoid type of cases;" (8) remember especially that hoarseness, many times, is the danger signal in diseases of the central nervous system, lungs, mediastinum, heart with adjacent large vessels, and think of the serious complications that develop from procrastination.

816 Empire Building.

DISCUSSION

Dr. E. L. Vansant, Philadelphia: One class of cases that will probably come up under the head of arytenoid cases that Kane has spoken of occurs in singers. The history usually is that the patient claims to have had a good tenor or soprano voice and suddenly became hoarse; of course it was impossible to sing any more. When we examine such a case we find the arytenoid fixed and the edges overlapping, shortening the vocal cords materially. Going into the history of the case we usually find that the patient is what we might call an uneducated singer. They have come to me usually from choirs, a young lady who thought she had a soprano voice or a young man who had been singing tenor. The actual fact in the case is that this individual had long before lost the tenor voice, or the soprano voice, and had made a strenuous effort to continue that voice by overlapping the arytenoids. He had shortened the cords and had been singing in a false voice, and finally through some slight inflammatory action, possibly cold, had lost the ability to shorten the cords. He is usually very much disappointed when I tell him that his tenor voice is gone and he will probably never be able to sing very well in that voice for any length of time.

SELECTIONS

PNEUMONIA

Walter H. Brown, M.D.
Health Officer of Bridgeport, Conn.

Pneumonia is the largest single cause of death in Bridgeport. Since Jan. 1, 1917, it has accounted for 397 deaths. This disease is of two kinds; one of which is communicable in precisely the same manner as tuberculosis. Therefore, measures should be taken at once to reduce the mortality from this cause. The department of health has planned to take some active steps toward preventing the communicable form of pneumonia.

REPORTING OF CASES

The first step in controlling disease is to know when, where and under what circumstances the disease is occurring. In order to obtain this information, the department will require the physicians of the city to report all cases of the communicable form of pneumonia. This does not mean that the patients will be quarantined like a case of smallpox. It does mean that the proper precautions will be observed to prevent the disease from spreading.

HOW THE DISEASE SPREADS

The communicable form of pneumonia is a germ borne disease. It is caused by a particular family of germs consisting of four members. These germs are known as Type I, II, III, IV. The first two are responsible for the majority of cases of lobar pneumonia.

The pneumonia germ lives and grows in the secretions of the nose and throat and lungs of the human body. It is found particularly in the sputum of those suffering from the disease. It is frequently found in those who are caring for the sick person and it may be found in the dust of the room where the sick person is confined. In order then, to "catch" pneumonia you must get some of these germs from one of these places into your nose or mouth.

HOW TO PREVENT PNEUMONIA

Pneumonia can be prevented in three ways:

1. *Disinfection.*—Killing the germs at the bedside of the sick person.

2. *Personal Hygiene.* — Keeping the germs out of your system.

3. *Proper Living.*—Keeping your body in good condition.

1. *Disinfection.*—This is first and foremost the duty of the physician, nurse and the department of health. The physician should see that proper instructions are given for the disinfection of all the discharges of the sick person at the bedside. The nurse should see that these orders are carried out and the department of health should see that the careless or incorrigible cases are placed under proper isolation. When the discharges from the bodies of every case of communicable disease are thoroughly disinfected at the bedside, the department of health can repeal its communicable disease regulations.

2. *Personal Hygiene.*—Keep the germs out of your body. Do this by keeping away from persons ill with pneumonia and keeping your hands *clean.* Unless compelled to care for the sick person you have no business to come in contact with them. Clean hands are more important than a pure heart in the prevention of pneumonia. In these days, we cannot help touching things that have been handled by others. Numerous articles are soiled by human discharges. Therefore, keep your fingers out of your mouth and *wash your hands carefully before eating.* Keep out of dusty, poorly ventilated places. Avoid the chronic —"cougher," "sneezer" and "spitter!"

3. *Proper Living.*—Keep your body in good condition. The human system will handle the majority of infections if we treat it right. Germs only overcome our bodies when bodily resistance is below par, or as we say—we are "run down." You can beat the pneumonia "bug" if you:

1. *Eat* sensibly.
2. *Drink* no alcoholic beverages.
3. *Sleep* and *work* in clean, pure air.
4. *Dress* seasonably.
5. *Exercise* sufficiently.

Pneumonia is the largest single cause of death in Bridgeport. The latest studies of the cause of this disease have shown that lobar pneumonia is a definitely communicable disease. Further, that the causative organisms fall into four types. Workers in the Rockefeller Institute have not only devised a laboratory method for determining which type of organism is present, but also have discovered an effective curative serum. The laboratory is now prepared to make diagnosis for physicians and in cases where patients are unable to pay, will furnish serum in selected cases. The details of this service will be presented to you by means of a personal letter.

The preparation of autogenous vaccines has become a valuable tool in the hands of physicians. Specimens for the preparation of such vaccines can be brought to the laboratory and the vaccine secured in forty-eight hours. The bacteriologist will be glad to confer with any physicians on the details of this service.—From *Bull. Dept. Health, Bridgeport, Conn.*

WEEDING OUT INCOMPETENT MEDICAL OFFICERS

Surgeon-General William C. Gorgas has ordered that steps be taken for the elimination from the service of all incompetent medical officers. By the provisions of this order, effective December 14, officers assigned to duties that they cannot competently perform because of unsuitable previous training, will be transferred and tried in other positions. If then unable to do satisfactory work they will be reported to the Surgeon-General as unfit and sent before a board with a view to their discharge from the service.

A number of medical officers are not fully qualified to perform their duties because of physical disability, mental incapacity, temperamental unfitness, laziness, inability to command men, lack of education or proper training. All division surgeons, commanding officers of base hospitals and other medical officers having subordinates, are directed to list those whose work has not been satisfactory. If mental incapacity is suspected, psychologic examination will be made. Systematic instruction in military hospitals is recommended to remedy incompetency due to poor training in the technic of professional work. The medical officers' training camps are relied on to correct deficiencies other than professional incapacity.

Medical officers who have been transferred will be given proper instruction in their new work and will not be discharged from the service until their superiors are convinced that they cannot become competent within a reasonable time. No action for discharge will be taken until they have failed in two lines of work—viz., the professional care of the sick and disabled and medical field work, the latter including camp sanitation, handling of men, first aid and transportation of wounded.—*Texas State Journal of Medicine.*

THE PENNSYLVANIA MEDICAL JOURNAL

Published Monthly **Official Organ of the Medical Society of the State of Pennsylvania**

CYRUS LEE STEVENS, A.M., M.D., Editor

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ATHENS, PA., MAY, 1918

SLACKERS

Slackers among medical men are not confined to those who for selfish reasons alone withhold their services from their country at war. Few are qualified to classify such delinquents as slackers, in many instances only the individual himself and the supreme Judge of us all being capable so to judge.

But what of the other types of slackers among medical men? What of the men who are at present more than ever indifferent to organized medicine? Surely many are qualified to classify properly that type of slacker. A sad state of affairs, indeed, that we cannot all give the required minimum amount of time, talent and money to keep a little better than alive the organizations that represent medical progress. Approximately 15 per cent. of our membership have responded to the call that means complete relinquishment of home and professional ties. We in words, which in the face of actual experience appear hollow, have said: "Go; we who remain behind will maintain intact, as best we can, your individual practices, and certainly your county and state societies. We will remit your dues while you are in active service, and extend to you all the privileges of your honored membership."

Fine words! but they don't ring true with the almost statewide appeals from secretary and treasurer, urging members to hasten to pay their own dues, and begging for contributions to meet deficits arising from dues which we but a few weeks since so gallantly remitted to our military members.

Selfish reasons alone should be sufficient to impel us all to keep abreast of the progress being attained by military medicine and surgery. Medical men in the Army and Navy have been rejuvenated in body by physical discipline and splendid hygienic régime. They are also being methodically and intensively trained in mind and experience and will return to civil practice equipped to set a pace that will leave far in the rear him who remained at home too busy to attend medical society meetings and too indifferent to read and study their proceedings.

W. F. D.

MAKING GOOD IN THE MEDICAL RESERVE CORPS

It has been a matter of considerable satisfaction that the medical men of Pennsylvania, who have gone into active service from the Reserve Corps, have in a large percentage made good. It was of course inevitable that, in a body of professional men who received their commissions, but who were without technical military training, there should be some who were either unprepared or who failed to seize the opportunity to prepare themselves beforehand for the new duties thrust on them. These men, of course, have been eliminated automatically, for if there has been one thing learned by the Reservist in this war, so far, it is that pretense is foredoomed to failure.

Many medical men, feeling that they were fairly successful in private professional practice, have thought that their work in the Army in war times would be purely medical and have rested content, awaiting an opportunity to show their professional skill and ability. The sad awakening has come for a large number, on their realization that their duties have been 95 per cent. military and 5 per cent. medical. The profession in Pennsylvania cannot, of course, claim ignorance on this point, as Colonel Henry Page practically reached the entire profession two years ago, before he left, and dwelt specifically on the fact that the medical man's duties in war times were largely administrative.

At the beginning of his duties, the active young doctor finds that his problems must be solved by himself, for it is taken for granted he knows his military business, that nothing else than knowing his business will save him from failure and that no one else has time to instruct him in that which he is supposed to have known before he entered the service. It was for this that the training camps and the Correspondence School for Officers at Fort Leavenworth were established, and those who failed to interest themselves during the last few years have found very little sympathy for their complaints as to their ignorance of military administration. In private life assumption may carry a doctor far, for there are many shifts and evasions available, and all have ample time to make good. In the military life, however, where hours are precious and today's duties can never be postponed until tomorrow, pretense of knowledge that does not exist is instantly exposed, and always to the detriment of the pretender. The lack of military knowledge has caused a certain percentage of the profession then to fall by the wayside, but the failure has been due not so much to the lack itself, as to the unwillingness of the officer to burn the midnight oil and try to catch up, and this type of man is apt to spend his time divided equally between complaining of the present system and endeavoring to find sufficient influence to gain a higher rank before he is even qualified for that which he holds. Garfield said, "Nothing ever turns up, it must be dug up," and he might have been thinking of the relation of the Reserve Corps to this war when he said it.

It is with a sense of satisfaction, also, that one reads of the Surgeon-General's action, looking toward vacating commissions of those of our profession who have failed to accept same after a long period of waiting, and it is to be hoped, in view of the fact that many more doctors are needed by the Army than are in it at present, that the Pennsylvania profession will go further in maintaining its splendid record for the high percentage of its profession in active service.

The rewards of a doctor in this war work are largely those of the spirit only. "The joy of a man in doing a man's work" is the satisfaction of a medical man in knowing that he can step out of the soft and easy ways of civil life and hold his own in military administration. The contentment that comes in knowing that he is making himself useful in the most valuable way at the time of his country's stress, the peace that comes of sacrifice made without complaining, the quiet maintenance of the splendid old traditions of the medical service, the mental poise that comes with the establishment of the self-respect of the doctor in active service above and beyond his share in doing his duty as a simple citizen of the land that has nurtured him, it is to these rewards, if he needs rewards, that the medical man must look, rather than to the material benefits for which so many unthinking men search but never find in the Army service. Surely Pennsylvania will hold her own as the Keystone State in medicine, and carry on the torch lit by John Morgan, and the old commonwealth will without question, on the day that peace is signed, look with pride on her sons of Æsculapius, who have unostentatiously upheld her hands.

C. P. F.

THE CALL FOR MEDICAL OFFICERS

The physician who volunteers for the Medical Reserve Corps at this time does so under different circumstances than did the men who volunteered a year ago when our country entered the war. Constructive legislation in the intervening period has removed many of the difficulties which at that time confronted the physician who faced the question as to whether or not he could volunteer for service. Congress has since provided for the care of dependents, for insurance and compensation, for increased pay on foreign service, for commutation of quarters, heat and light, for a moratorium on debts and leases of officers in the service, and for reconstruction and reeducation of the disabled and injured. Army regulations now provide that officers may purchase equipment directly from the Quartermaster's Department. Physicians who entered the service over a year ago did so without the assurance that this new legislation conveys. They made greater sacrifices than are required now.

The physician who comes into the Medical Reserve Corps today has probably been confronted with circumstances which prevented him from volunteering earlier. Many have hesitated because of fear as to the care of their dependents, of the inadequacy of the salary of a medical officer, of provision for their dependents in case of unfortunate disaster to themselves. To these men the Medical Department of the Army can now say that there is no longer cause for such fears and doubts.

The medical profession of Great Britain, well-nigh exhausted by the drains on its services, it is confidently stated elsewhere, will volunteer quickly to fill new demands. The American medical profession will do no less nobly. THE TIME HAS COME FOR EVERY MEDICAL MAN UNDER 55 YEARS OF AGE, WHO IS PHYSICALLY QUALIFIED, TO CONSIDER SERIOUSLY FOR HIMSELF THE QUESTION OF HIS DUTY TO HIS GOVERNMENT.—*Jour. A. M. A.*, April 27, 1918.

A CALL FOR SEVEN THOUSAND MORE MEDICAL OFFICERS

The Surgeon-General of the Army has asked for five thousand more medical officers, and the Surgeon-General of the Navy for two thousand additional. These men should be secured without undue delay and from a preliminary survey of conditions it appears that they should come largely from the cities and not as a rule from the rural communities.

The House of Delegates at New York "formally and officially" offered "to the government the service and facilities of the American Medical Association for such assistance as it may be in its power to render." Now Surgeon-General Gorgas expresses the earnest desire "for the closest cooperation and assistance of the American Medical Association, its officers and its allied organizations." The War Committee of the Association, appointed at a former request of the Surgeon-General, called a conference of the state secretaries to consider how best to secure "the active, cordial and earnest cooperation of every state association and of every county society."

This conference of secretaries was held in Chicago, April 30, with thirty-eight states represented. Six hours were spent in hearing from the several states and in discussing ways and means for securing the seven thousand additional physicians now needed and the necessary increments from year to year, and with the least hardship upon any college, hospital, industry or community. The following resolutions were adopted:

> That the secretaries of state medical associations request the presidents of their respective state associations to appoint a war committee of three immediately, one of whom may be the secretary of the state association, for the purpose of coordinating the profession of each state for war work.
>
> That it be the sense of the conference that each secretary immediately on arriving home shall elicit the support of every county society in the state association, in order that this important matter may be brought to the attention of physicians as soon as possible.
>
> That the chairman of the conference (Dr. Thomas McDavitt) be delegated to represent the state secretaries at the confrence to be held at Washington, Saturday, May 4.
>
> That the conference request the War Board, after conference with the Surgeon-General, to draw up a form of questionnaire as a guide for the collection of the data regarding individual doctors throughout the United States.

Pennsylvania at one time was reported as having the third largest percentage of its medical men under commission. It has now fallen to the seventh place. We have done well—we are not doing our best—we must do our all.

COMMUTATION OF QUARTERS FOR OFFICERS

The President has signed the bill for commutation of quarters. The bill provides that "during the present emergency every commissioned officer of the Army of the United States on duty in the field, or on active duty without the territorial jurisdiction of the United States, who maintains a place of abode for a wife, child or dependent parent, shall be furnished at the place where he maintains such place of abode, without regard to personal quarters furnished him elsewhere, the number of rooms prescribed by the Act of March 2, 1907, to be occupied by, and only so long as occupied by, said wife, child or dependent parent; and in case such quarters are not available every such commissioned officer shall be paid commutation thereof, and commutation of heat and light, at the rate authorized by law in cases where public quarters are not available; but nothing in this Act shall be so construed as to reduce the allowances now authorized by law for any person in the Army." This most important legislation is destined to relieve much real distress. Like much other legislation, the verbiage of the law is doubtful on some points and the comptroller has been asked to issue rulings and interpretation of the new legislation for the guidance of disbursing officers. The law was passed in order that officers who are compelled to maintain a residence for their dependents may receive commutation to help meet this drain on their resources. The question has arisen as to whether officers on duty abroad, who are provided with commutation of quarters, heat and light, for instance, in France, will also receive allowance for a family in this country. According to the *Army and Navy Register,* "It is hoped that the comptroller will decide that an officer may draw double commutation of quarters for the full number of rooms allowed for his grade with commutation of heat and light, for the number of rooms actually occupied abroad by himself, and the number of rooms actually occupied by the members of his family at home." Another question concerns the interpretation of the words "wife, child and dependent parent," and it is suggested that the latter term includes father, mother, grandfather, grandmother, step-father, step-mother, either of the officer or of his wife. For those physicians who do not understand the interpretation of the term "commutation of quarters," we may say that a commissioned officer on duty at a place at which no public quarters are available — such as an Army post — is entitled to commutation of quarters, which amount is added to the pay of the officer by the paymaster each month. The officer is also entitled to commutation for fuel and light, which is also entered on his voucher according to tables published in Army Regulations. The commutation consists of $36 for first lieutenant, $48 for captain and $60 for major. As will also be seen from the text of the law, this commutation of quarters is not paid to unmarried officers unless they maintain a home for a dependent parent.—*Jour. A. M. A.*, April 27, 1918.

THE SUPREME COURT DECISION ON THE CORPORATE RIGHTS OF THE AMERICAN MEDICAL ASSOCIATION

In 1910 the state's attorney of Cook County (Chicago) was petitioned to institute "quo warranto" proceedings against the American Medical Association on the grounds that the Association's affairs were being conducted illegally in that its officers were elected at annual sessions held outside of the state of Illinois. The state's attorney refused to take action in the matter, and later, the attorney general of the state, who was appealed to, also refused to act. January 5, 1911, mandamus proceedings were begun in the Circuit Court of Cook County, Illinois, to compel the state's attorney to initiate the quo warranto action which he had declined to institute. Until December 20, 1915, the issue was between the parties asking for the "mandamus" and the state's attorney of Cook County, Illinois; the point at issue being the technical one as to whether the state's attorney was compelled to act or had discretionary authority in the matter. The case went through the lower courts and finally was carried to the Supreme Court of Illinois, which in December, 1915, refused to hear arguments on the merits of the cause as it related to the American Medical Association, but ordered the Circuit Court to take up the original quo warranto proceedings designed to raise the question of whether or not Illinois corporations "not for profit" are compelled to hold their elections and conduct their business within the confines of the state. Up to this point the American Medical Association was not technically interested in the controversy; now, however, it became a party in the action. Quo warranto proceedings against the members of the Board of Trustees were instituted in the Circuit Court of Cook County, Illinois, which after trial rendered a decision favorable to the Association. The case was then carried to the Appellate Court of Illinois, which confirmed the decision of the Circuit Court. An appeal was finally made to the Supreme Court of Illinois, which last week (April 16) rendered its decision, settling the question. This decision is entirely satisfactory so far as the Association is concerned. One paragraph of the opinion reads:

> It seems reasonably to follow that if a corporation not organized for pecuniary profit may hold meetings at stated times outside of the State of Illinois, composed of delegates selected by the constituent associations, for the transaction of business of the corporation, it is not unlawful to authorize and provide for the election by said house of delegates of trustees of the corporation. The American Medical Associa-

tion was organized solely for the purpose of the advancement of medical science. Its purpose was to improve methods for the treatment and prevention of diseases of the human race. Its usefulness for these purposes would be seriously interfered with, if not absolutely destroyed, if it could not provide for the election of trustees from the most efficient men in the association throughout the United States, by delegates selected by the constituent associations from the various States in the Union. Such authority to the house of delegates is conferred by the by-laws and is not in conflict with or prohibited by the constitution or laws of Illinois relating to corporations not for pecuniary profit.

The decision is important not only to the American Medical Association, but also to all organizations incorporated under the law of Illinois — in fact of any state — governing corporations "not for profit." — *Journal of the A. M. A.*, April 27.

CHICAGO SESSION

The session of the American Medical Association, Chicago, June 10 to 14, will be largely attended. For particulars see The Journal of the American Medical Association for May 11. Those who can do so should plan to attend the clinics arranged for June 6 to 11 by forty of the city hospitals. There will also be demonstrations and exhibits of laboratory and other diagnostic measures at the medical schools.

COUNTY SOCIETY HONOR ROLL

The following societies have forwarded 1918 receipts and per capita assessments for as many members as they paid for in 1917. The figures indicate the percentage of membership paid for as compared with 1917.

	Cent.
Carbon County	110
Lebanon County	110
Juniata County	109
Warren County	107
Clarion County	106
Union County	106
Columbia County	102
Berks County	102
Clearfield County	101
Wyoming County	100
Wayne County	100
Clinton County	100
Elk County	100
Chester County	100
Delaware County	100

The societies of Crawford, Greene, Huntingdon and McKean counties have paid for all of their 1917 members who are now living in the respective counties, but not for as many as they had last year, some having died and others having been transferred.

PAYMENT OF PER CAPITA ASSESSMENT

The *per capita* assessment for the year 1918 has been received from component county societies since March 30, as acknowledged on pages 469 and 470 of the April Journal, as follows:

1918				
3/30	Wayne	32	3393	$ 2.75
	Berks	98–104	3394–3400	19.25
	Armstrong	53–58	3401–3406	16.50
	Indiana	10–26, 28–32, 35–55, 57–65	3407–3458	143.00
	Susquehanna	15–17*	3459–3461	
	Somerset	38	3462	2.75
	Fayette	78–98	3463–3483	57.75
	Lycoming	78–81	3484–3487	11.00
	Center	7–15	3488–3496	24.75
	Erie	88–111	3497–3520	63.25
	Erie	112*	3521	
	Butler	31–43	3522–3534	35.75
	Beaver	50–52	3535–3537	8.25
	Westmoreland	101–102	3538–3539	5.50
	Clinton	19	3540	2.75
	Somerset	39	3541	2.75
	Lackawanna	124, 126–128	3542–3545	11.00
	Luzerne	79, 139–140, 142–144	3546–3551	16.50
	Luzerne	145–172*	3552–3579	
	Wayne	33	3580	2.75
	Clinton	20	3581	2.75
	Blair	72–73	3582–3583	5.50
	Blair	74–85*	3584–3595	
	Cambria	17–72	3596–3651	154.00
4/ 1	Jefferson	55	3652	2.75
	Clearfield	70	3653	2.75
	Lawrence	45–47	3654–3656	8.25
	Mifflin	27–28	3657–3658	5.50
	Northampton	106–109	3659–3662	11.00
	Westmoreland	103–104	3663–3664	5.50
	Philadelphia	1–1347	3665–5011	3,575.00
	Philadelphia	1348–1455*	5012–5119	
	Allegheny	467, 469–508, 513–568, 570–659, 661–717, 719–739	5120–5384	728.75
	Somerset	40	5385	2.75
	Bedford	5–9	5386–5390	13.75
	Lycoming	82–83	5391–5392	5.50
	Butler	44	5393	2.75
	Schuylkill	81–83	5394–5396	8.25
	Schuylkill	84–98*	5397–5411	
	Venango	36	5412	2.75
	Franklin	48	5413	2.75
	Clinton	21–22	5414–5415	5.50
	Beaver	53	5416	2.75
	Dauphin	83–113	5417–5447	85.25
	Dauphin	114–126*	5448–5460	
	Lackawanna	129–133	5461–5465	16.50
	Bedford	10	5466	2.75
	Lackawanna	134–137	5467–5470	11.00
	Lycoming	84–86	5471–5473	8.25
	Butler	45–46	5474–5475	5.50
	Bedford	11	5476	2.75
	Northumberland	48–49	5477–5478	5.50
	Susquehanna	18–19	5479–5480	5.50
	Fayette	99–101, 103, 105	5481–5485	13.75
	Lycoming	87–93	5486–5492	19.25
	Clinton	23	5493	2.75
	Center	16–22	5494–5500	19.25
	Bucks	83	5501	2.75
	Luzerne	141, 173–182	5502–5512	30.25
	Delaware	82–83	5513–5514	5.50
	Erie	41, 113–114	5515–5517	5.50
	Beaver	54–55	5518–5519	5.50
	Tioga	26–28	5520–5522	8.25
	Washington	1–60	5523–5582	165.00
	Mongomery	125–126	5583–5584	5.50
	Bedford	12–18*	5585–5591	

Clinton	24–25*	5592–5593	
Butler	47–48	5594–5595	5.50
Fayette	106–107	5596–5597	5.50
Lawrence	48–50	5598–5600	8.25
Luzerne	183–184	5601–5602	5.50
Montgomery	127–128	5603–5604	5.50
Lackawanna	138–141, 143–144	5605–5610	16.50
Lackawanna	142*	5611	
Indiana	66–67	5612–5613	5.50
Lycoming	94–96	5614–5616	8.25
Northumberland	50–52	5617–5619	8.25
Beaver	56–58	5620–5622	8.25
Northumberland	53–55	5623–5625	8.25
Bedford	19	5626	2.75
Armstrong	59*	5627	
Cumberland	30–31	5628–5629	5.50
Franklin	49–50	5630–5631	5.50
Tioga	29	5632	2.75
Berks	105–113	5633–5641	24.75
Lancaster	128–132	5642–5646	13.75
Washington	61–62	5647–5648	10.00
Beaver	59	5649	2.75
Venango	37–46	5650–5659	27.50
Lehigh	76–87	5660–5671	33.00
Venango	47–48	5672–5673	5.50
Lackawanna	125	5674	
Clarion	35–36*	5675–5676	2.75
Franklin	51	5677	2.75
Lackawanna	145–150	5678–5683	16.50
Potter	20*	5684	
Bedford	20	5685	2.75
Northumberland	56	5686	2.75
Montour	19	5687	2.75
Blair	86	5688	2.75
Luzerne	185–191	5689–5695	19.25
Butler	49	5696	2.75
Tioga	30–31	5697–5698	5.50
Elk	22	5699	2.75
Bedford	21	5700	2.75
Lackawanna	151–153	5701–5703	8.25
Montgomery	129–130	5704–5705	5.50
Dauphin	127–134	5706–5713	22.00
Dauphin	135*	5714	
Allegheny	740–744, 746–750, 922–938, 940, 942–949, 951–971, 973	5715–5772	159.50
Allegheny	745, 751–766, 768–857, 859–863, 865–876, 878–905, 907–921, 972*	5773–5940	
Allegheny	974–976, 978–985	5941–5951	30.25
Clearfield	71	5952	2.75
Cumberland	32–33	5953–5954	5.50
Chester	77–85	5955–5963	35.75
Northampton	110–117	5964–5971	22.00
Northampton	118–119	5972–5973	5.50
Venango	49	5974	2.75
Northumberland	57	5975	2.75
Jefferson	56	5976	2.75
Delaware	87	5977	2.75
Beaver	60–61	5978–5979	5.50
Schuylkill	99–101	5980–5982	8.25
Schuylkill	102*	5983	
Washington	63, 64, 66–76, 87–90	5984–6000	42.25
Washington	65, 77–84, 86*	6001–6010	
Delaware	84–86	6011–6012	8.25
Delaware	85*	6013	
Armstrong	60	6014	2.75
Berks	114–115	6015–6016	5.50
Snyder	15	6017	2.75
Luzerne	192–194	6018–6020	8.25
Philadelphia	1456–1619	6021–6184	580.25
Philadelphia	1620–1673*	6185–6238	
Perry	1–16	6239–6254	44.00

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* Dues remitted.

STATE NEWS ITEMS

MARRIED

Dr. Lewis Stockton Walton, Altoona, and Miss Edith Christie Baldrige, Hollidaysburg, April 6.

DIED

Dr. John S. Tryon (Univ. of Pennsylvania, '57) at Rehrersburg, March 6, aged 84.

Daniel L. Collom (Jefferson Med. Coll., '76) in Meadville, April 28, from tuberculosis, aged 69.

Dr. Fannie W. Sanborn (licensed, Pennsylvania, '77) of Scranton, in Clarks Summit, March 22, aged 79.

Dr. Granville Moody Brubaker (Baltimore Med. Coll., '94) of Roxbury, in Waynesboro, March 15, aged 49.

Dr. Alexander A. E. McCandless (Jefferson Med. Coll., '70) in Pittsburgh, March 23, from pneumonia, aged 68.

Dr. Jacob Stickel (University of Michigan Medical School, Ann Arbor, '67) in Williamsport, March 27, aged 74.

Dr. William D. McCune (Miami Med. Coll., Cincinnati, '79) in Branchton, March 16, from senile debility, aged 70.

Dr. Robert Murdock (Hahnemann Med. Coll. and Hosp., Philadelphia, '72) in Wilkes-Barre, March 22, from heart disease, aged 70.

Dr. Gustaf Lewis Norstedt (Jefferson Med. Coll., '16) of Mt. Carmel, at Camp Upton, N. Y., where he was on duty, from pneumonia, March 16, aged 26.

ITEMS

St. Vincent's Hospital has received a bequest of $1,000 by the will of the late James McHugh.

Dr. Jane R. Baker, West Chester, has been appointed trustee of the Asylum for the Chronic Insane at Wernersville.

Dr. J. W. Campbell of Elderton has gone to Wukari, Northern Nigeria, West Africa, in the capacity of a medical missionary.

Major Henry D. Jump, Philadelphia, addressed the Medical Society of the State of California at its annual meeting in Del Monte, April 16, his subject being "The Medical Reserve Corps."

Dr. William M. Savedoff left Hamburg Sanatorium on April 15 to accept a position as acting superintendent of the Eagleville Sanatorium. He is a graduate of the University of Berlin.

Capt. Henry C. Welker, Norristown, died in the Washington Hospital, May 2. He went to France last September as a member of the Episcopal Hospital Unit and had returned on sick leave.

Dr. William C. Wallace, Ingram, is a candidate in the Republican primaries for Congress in the thirty-second district, that part of Allegheny County south of the Monongahela and Ohio rivers.

Lieut. Isaac I. Parsons, Media, was seriously wounded in France during the last week of April. Lieutenant Parsons was injured several months ago but soon recovered and resumed his active duties at the front.

"Dry Mouth."—Dr. Herman Prinz of the Thomas W. Evans Dental Institute, University of Pennsylvania, Philadelphia, wishes to enter into communication with physicians who have treated cases of xerostomia, dry mouth.

Dr. John J. Gilbride, Philadelphia, addressed the Harrisburg Academy of Medicine at Harrisburg on April 26, his subject being Causes of Death Following Operations. A luncheon followed the address at which Dr. Gilbride was guest.

The Pennsylvania State Dental Society held its golden anniversary in Wilkes-Barre, April 24-26. One of the most important subjects for discussion was the reconstruction of a human face that shot and shell has ruined, the foundation for the surgical work of which must be laid in the jaws and teeth.

Medical Club Reception. — The Medical Club of Philadelphia tendered a reception April 19 at the Bellevue-Stratford Hotel, to Rear-Admiral J. M. Helm, U. S. Navy, Commandant, Fourth Naval District, and Rear-Admiral Benjamin Toppan, U. S. Navy, Commandant, Philadelphia Navy Yard.

Lackawanna County Doctors on French Front. —On April 25 it was reported that Dr. D. E. Berney, Scranton, was wounded in the thigh. Dr. James O'Toole, Scranton, is reported to be severely wounded. Both are in hospitals in England. Dr. J. L. Loftus, Old Forge, is serving with American forces on a quiet part of the western front.

Dr. Alice Weld Tallant, professor of obstetrics at the Woman's Medical College of Pennsylvania, read a paper on "Civilian Relief Work in France" before a special meeting of the Medical Society of the Woman's Hospital of Philadelphia, March 25. Dr. Tallant has recently returned from the war zone where she was connected with the Smith College Reconstruction Unit in France.

Dr. Leo A. Huebsch, who has been a resident physician of the State Sanatorium at Hamburg, left on April 1 to take the position of state superintendent at the Workmen's Circle Sanatorium, Liberty, N. Y. Dr. Huebsch is a graduate of the University of Jurjev, Russia. His service at Hamburg won him the respect and liking of his patients, his fellows and his superiors. He is a member of the Berks County Medical Society.

Naval Hospital to Be Enlarged. — The U. S. Naval Hospital at Gray's Ferry Road will be enlarged by the addition of several buildings which will give the institution a total capacity of 1,400 beds. The hospital at the Navy Yard will be enlarged by the addition of two wards which will accommodate about 800 more beds. The sum of $355,000 has been appropriated for the former institution, while $800,000 has been appropriated for the work at the Navy Yard.

Plans for a Mosquito Campaign.—A conference was held at the Academy of Natural Sciences, March 29, at which time a campaign was begun by federal, state and city governments and by industrial establishments, to exterminate mosquitoes in South Philadelphia and Delaware County. Dr. B. F. Royer, acting state commissioner of health, presided as the commonwealth's representative, and the city was represented by Dr. Andrew A. Cairns, acting chief of the bureau of health.

The State Health Department has 232 of its attaches in the Federal Service or commissioned as officers of the M. O. R. C. The honor roll begins with seven medical officers who have been commissioned as majors, 28 medical officers and 8 sanitary engineers who have been commissioned as captains, 168 medical officers, 2 sanitary engineers, and 1 health officer as first lieutenants, 5 state officers to various special branches of the service, and 13 nurses to the nursing corps of the army.

Base Hospital Unit No. 20 of the University of Pennsylvania left on April 1 for France. The unit was organized last fall and started training November 1. It consists of 150 men, of whom probably more are athletes than any other similar organization of men sent to France from this country. Major John B. Carnett is the medical head of the unit and his staff includes Major George M. Piersol, Captains T. M. Edwards and William Bates. The military commander is Major Thomas H. Johnson, U. S. Army.

GENERAL NEWS ITEMS

The American Public Health Association will meet in Chicago Oct. 14-17, 1918. The theme of the meeting will be "The Health of the Civil Population in War Time."

Prohibition in Peru.—A law which prohibits the sale of alcoholic liquors on Saturdays and Sundays has recently been passed by the legislature and signed by the president.

Ichthyol Now Produced in Italy.—It has been found that the bituminous schist in the Vallepiana district in Italy yields a high grade of ichthyol which is equal to the best hitherto imported from Austria.

Expensive Expectoration.—On March 21, 235 persons in Chicago, charged with violating the city ordinance prohibiting expectoration on the sidewalks and in public places, were arrested; 226 pleaded guilty and were each fined $1.

The Mortality of Childhood is the title of a pamphlet reprint from the Quarterly Publication of the American Statistical Association for March. This is a valuable paper and can be had from the Metropolitan Life Insurance Company, New York.

Dr. Stephen Smith has resigned from the New York State Board of Charities at the age of 95 years. He has held this office continuously since 1881, with the exception of the years 1882-88, when he was a member of the State Commission in Lunacy.

The Manhattan Life Insurance Company has notified its examiners that the company will now pay a flat fee of $5 for each examination irrespective of the amount applied for or whether the examination be made at the office of the examiner or at the home of the applicant.

Dr. J. L. Amster, city health commissioner of New York, sent his resignation on April 29 to Mayor Hylan because he did not wish to participate in carrying out any policy which might not conform to his own standard of efficiency. He is succeeded by Dr. Royal S. Copeland.

Dr. E. Fletcher Ingals, Chicago, a former president of the American Medical Association, died April 30, 1918, from angina pectoris, aged 70. In an article on angina pectoris, published in *The Journal of the American Medical Association,* April 6, 1918, he described his own case as that of "X."

Chiropractor Convicted.—Torizo Tanaka, a Japanese chiropractor, conducting an elaborate office, Cleveland, Ohio, and having the legal backing of the combined chiropractic interests, was convicted of practicing medicine and surgery without a license and sentenced to thirty days in the workhouse and fined $250 and costs.

Death Rate from Tuberculosis.—A bulletin issued April 28, 1918, gives the death rate of ten principal cities in the United States for 1917 from tuberculosis per 100,000 population as follows: Pittsburgh, 147.05; Chicago, 148.67; Detroit, 160.96; Boston, 170.87; Cleveland, 174.7; New York, 176.75; Philadelphia, 194.81; Los Angeles, 199.42; St. Louis, 202.95; Baltimore, 236.61.

Writ Denied.—March 27, Judge Oscar M. Torrison, Chicago, entered an order overruling the motion of counsel for Drs. Arthur L. Blunt and Isaac Hodgens, for a writ of certiorari to compel the state board of registration and education to produce in court the records of the proceedings by which that body revoked the licenses of the two physicians.

Practical Examinations Required.—The department of registration and education of Illinois has adopted the requirement that hereafter the examination for license to practice medicine in the state will include practical examinations in pathology and bacteriology; surgery and gynecology; medicine, including pediatrics and neurology, and diseases of the eye, ear, nose and throat.

Upholding Venereal Disease Regulations. — An attempt at San Jose, Calif., to obtain the release by habeas corpus proceedings of persons quarantined for venereal diseases under the regulations of the state board of health was prevented by Judge J. R. Welch in the superior court, who dismissed the case and remanded the infected persons to the care of the health officer. The regulations have been similarly upheld at San Diego and Los Angeles.

To Guard Health of Women in Ordnance Department of Army. — A health department in the women's division of the Industrial Section Service of the Ordnance Department of the army has been created to look after the health of women employed in the arsenals and other ordnance plants. The new department will be under Dr. Kristine Mann, director of the health clinic for industrial women in New York and lecturer on hygiene at Smith College.

The New York Board of Regents Revoked the Licenses of Dr. William L. Owen, New York, and Dr. Henry Seligman, Brooklyn, at a meeting held March 28. Dr. Owen was recently convicted of repeatedly failing to record the disposition of heroin and has been sentenced to the federal prison at Atlanta, Ga. Dr. Seligman was convicted of conspiracy in an attempt to discharge and exempt Joseph Levy from the requirements of the selective service act.

Council on Pharmacy and Chemistry.—Since the last report the following articles have been accepted for inclusion with new and nonofficial remedies: chlorcosane (Calco), Calco Chemical Company; normal horse serum, concentrated and refined diphtheria antitoxin, concentrated and refined tetanus antitoxin, typhoid vaccine, smallpox vaccine, original tuberculin, "O. T.," tuberculin ointment in capsules (for the Moro percutaneous test), bouillon filtrate tuberculin, "B. F.," bouillon emulsion tuberculin, "B. E.," tuberculin residue, "T. R.," tuberculin for the Detre Differential diagnostic test, Gilliland Laboratories; dichloramine-T, Monsanto Chemical Works; cresol-Merck, guaiacol carbonate-Merck, quinine dihydrochloride-Merck, quinine and urea hydrochloride-Merck, thymol iodide-Merck, Merck and Company.

Dr. Thomas L. Richardson, Baltimore, will enter the U. S. Public Health Service when Quarantine is taken over by the government, under the terms of a lease authorized by the Baltimore city officials. As soon as a congressional appropriation becomes available, the city will be paid $76,000 for the buildings, grounds and equipment. City patients suffering from quarantinable diseases are to be treated by the government at $1 a day per patient.

Osteopaths Endeavor to Extend Their Field of Practice.—A bill has been introduced into the legislature of the state of New York, providing for an amendment to the Public Health Law by removing the limitations now placed on osteopaths which prevents these practitioners from administering drugs or performing surgery with the use of instruments. Commissioner Amster has requested the city's legal representative to express the health department's disapproval of this measure.

Commissioner of Health of Massachusetts.—The recalling of Dr. Allan J. McLaughlin to the U. S. Public Health Service to become Assistant Surgeon-General in charge of the Division of Interstate Quarantine, left a vacancy in the health commissionership, filled by Dr. McLaughlin since November, 1914. Dr. Eugene R. Kelley, formerly commissioner of health of Washington, and for three years past director of the department of communicable diseases in the Massachusetts organization, has been appointed to fill the vacancy.

Laboratory to Study Stutters.—Funds have been raised for a new $20,000 speech laboratory in Boston. Dr. Walter B. Swift, clinical assistant in laryngology of the Harvard Graduate School of Medicine, and assistant in the laryngological department of the Massachusetts General Hospital speech clinic, is in charge of the work. His courses at Harvard cover the psychological, medical educational and treatment aspects of speech correction, and his clinics include the training of public school teachers in methods of speech correction. The research of the new laboratory will therefore have a direct bearing on the work of the public schools.

American Hay Fever Prevention Association.—At a meeting of the association in New Orleans, April 14, Dr. William Scheppegrell made a report showing that with the cooperation of the city board of health and the mayor in cutting weeds, etc., the hay fever situation has been improved. Especially important has been the appointment of a weed cutting day in August, 1917. The hay fever clinic at the Charity Hospital had demonstrated the practicability of immunization against hay fever. A department for colored patients has been added to the clinic. All state boards of health in the United States except six are now represented in the association.

We want more short and crisp articles. Why not "get busy" and write one yourself? Then boil it down; then condense some more. Finally get your wisest local medic. to criticize it, verify his criticism from good textbooks, rewrite it again, and send it in. Your fellows in the profession will be glad to read it.—*Medical Council.*

COMMUNICATIONS

MORE MEDICAL MEN NEEDED

Office of Surgeon-General,
Washington, D. C., April 8, 1918.

To the Editor:—1. I wish to call to the attention of the profession at large the urgent need of additional medical officers. As the war progresses the need for additional officers becomes each day more and more apparent. Although the medical profession of the country has responded as has no other profession, future response must be greater and greater. The Department has almost reached the limit of medical officers available for assignment.

2. I am, therefore, appealing to you to bring to the attention of the profession at large the necessity for additional volunteers. So far the United States has been involved only in the preparatory phase of this war. We are now about to enter on active, or the fighting phase, a phase which will make enormous demands on the resources of the country. The conservation of these resources, especially that of man power, depends entirely on an adequate medical service. The morning papers publish a statement that by the end of the year a million and a half of men will be in France. Fifteen thousand medical officers will be required for that army alone. There are today on active duty 15,174 officers of the Medical Reserve Corps.

3. Within the next two or three months the second draft will be made, to be followed by other drafts, each of which will require its proportionate number of medical officers. There are at this time on the available list of the Reserve Corps an insufficient number of officers to meet the demands of this draft.

4. I cannot emphasize too strongly the supreme demand for medical officers. Will you give the department your assistance in obtaining these officers? It is not now a question of a few hundred medical men volunteering for service, but it is a question of the mobilization of the profession; in the large centers of population and at other convenient points, as well as at all Army camps and cantonments, boards of officers have been convened for the purpose of examining candidates for commission in the Medical Reserve Corps of the Army. An applicant for the Reserve should apply to the board nearest his home.

5. The requirements for commission in the Medical Reserve Corps are that the applicant be a male citizen of the United States, a graduate of a reputable school of medicine authorized to confer the degree of M.D., between the ages of 22 and 55 years, and professionally, morally and physically qualified for service.

6. With deep appreciation of any service you may be able to render the department, I am,

W. C. Gorgas,
Surgeon-General, U. S. Army.

UNTOWARD RESULTS FROM ARSPHENAMIN

Treasury Department, U. S. P. H. Service,
Hygienic Laboratry,
Washington, D. C., April 5, 1918.

To the Editor:—In view of the reports in current medical literature of untoward results from the use of arsphenamin and neoarsphenamin, I have to request that you give publicity to the statement that it is requested that samples of any lots of these arsenicals which have shown undue toxicity be forwarded to the Hygienic Laboratory for examination.

In sending these samples it should be ascertained that the lot number is the same as that of the ampoules used on patients. The samples sent should, if possible, be accompanied by a brief note stating the approximate body weight and age of the patient, the dose and dilution of the drug given, the symptoms and result; that is, whether fatal or not.

Respectfully,
G. W. McCoy, Director.

"THE PHYSICIAN'S ATTITUDE TOWARD ALCOHOL"

To the Editor: I feel sure that the spirit which inspired your editorial, "The Physician's Attitude Toward Alcohol," in the March issue meets a most hearty response in the minds of many of your readers.

The indictment against the use of alcoholic beverages, because they lower vitality and thus invite disease, is so clear and strong that many of us wonder why physicians condone their use, and I sincerely hope the symposium proposed by you for the columns of The Journal may excite some of them to state their reasons for doing so.

The postmortem evidences of the baneful effect of alcoholic liquors on the human system are so patent that it seems superfluous to mention them to any student of pathology, nay even an insult to the physician of ordinary intelligence to enumerate them for his enlightenment. Let those who insist on the harmlessness of alcoholic beverages, even in the form of a social glass, render their reasons for using them, and I shall give a most respectful hearing.

In our Civil War able-bodied troops (of whom I was one) were served whisky as a ration by the government. Today the government is using every effort to prevent the soldier and sailor securing it. A clear head and a steady hand are essential to greatest efficiency, and this is true not only of the soldier and sailor, but also of the physician, the surgeon and the civilian. We cannot ignore the psychoses due to alcohol when used even in moderation. Observations in memory tests, typewriting, typesetting, and marksmanship conclusively prove that the moderate use of alcoholic liquors impairs both mental and physical efficiency.

The people generally as well as the majority of the profession realize that we have been harboring an enemy in the guise of a friend and are determined to get rid of it. We as physicians are supposed to lead the populace in all matters pertaining to their physical welfare and yet intelligent laymen surpass us many times in wisdom and discretion. The lay alumni of Harvard and Yale and the Grand Lodge of Masons of Pennsylvania have interdicted the use of alcoholic beverages at their annual banquets. Shall we do less?

Tempora mutantur, et nos mutamur in illis.

G. Wilds Linn.

Malvern, April 20, 1918.

BULLETIN EXCERPTS

BULLETIN, ALLEGHENY

German Kultur Not a New Thing

"Every village they have passed through has been the victim of what is only organized pillage. Every city has been practically sacked, ransacked on system; its citizens plundered, its civil officials terrorized, imprisoned, outraged, or killed. The civil populations have been, contrary to the usage of modern warfare, forced to serve the invading armies, brutally put to death, reduced to wholesale starvation, and desolation. Vast tracts of the richest and most industrious districts of Europe have been deliberately stripped and plunged into famine, solely in order that the invaders might make war cheaply. Irregular troops, contrary to all the practice of war, have been systematically murdered, and civil populations indiscriminately massacred, solely to spread terror. A regular system of ingenious terrorism has been directed against civilians, as horrible as anything in the history of civil or religious wars. Large and populous cities have been, not once, but twenty, thirty, forty times, bombarded and burnt, and the women and children in them wantonly slaughtered, with the sole object of inflicting suffering. All this has been done not in license or passion, but by the calculating ferocity of scientific soldiers."

The above was not written, though it might have been, yesterday, last week, last month, or last year. It appeared in the English *Fortnightly Review*, February, 1871, shortly before the surrender of Paris. Frederick Harrison, the writer, is still alive. Its statements were true then, are true now. Julius Cesar in his Commentaries narrates events which show that even before the time of Christ the Germans demonstrated the possession of all of the rudiments of their modern "kultur." It is no new thing; and hundreds of thousands of men will have died in vain in this war if this sinister thing is not absolutely and utterly exterminated forever by the forces of civilization arrayed against it.

BULLETIN, BERKS

ETHICS

Lest We Forget

It may not be out of place to be reminded, now and then, that there is such a word as ethics. We are prone to forget and become selfish and self-centered instead of being altruistic, which should be exemplified in our profession as perhaps in no other. We "dig ourselves in," as it were, and the other fellow has no thought in our minds. We need not openly antagonize a brother practitioner, perhaps we only let slip a word lightly spoken, which may in the ears of the laity be construed as a criticism, and be quickly taken advantage of; and inadvertently we are the cause of much trouble. It is our "golden rule" and is essential to our very existence. Take it away and we lose the real essence of that which makes our profession noble.

BULLETIN, CLEARFIELD

Third Liberty Loan

In the June Bulletin the secretary proposed that the county medical society buy a Liberty Bond, in order to help Uncle Sammy and at the same time to place our treasury in good shape to meet any demands that may be made on it during the period of the war. We as a society are losing some of our ordinary funds by remitting the dues of nine members who are in the Service and are at considerable expense in taking care of the practice of the members who are fighting our battles for us and who knows but that we may need a reserve fund for an emergency at any time? Some of us cannot buy a Liberty Bond ourselves but surely any of us could spare a five-dollar bill to help lick the Kaiser and I believe a great majority would be glad to do it. What do you say to the proposition that the society at its next meeting pass a resolution that an assessment of $5 be levied on each member for this purpose? Now this is your business and if you cannot be at the meeting, at least let the secretary have a card from you before the meeting saying whether or not you favor the proposed motion. Do it now.

ACADEMICIAN, DAUPHIN

Our Allies have not been compelled to force one medical man into this struggle for humanity. We certainly would not stand by and allow the boche to burn our home and why stand by and allow him to destroy our country and freedom? Neither do we want it said that Uncle Sam was compelled to force us into it. Get the Philadelphia habit. It has traveled over the entire country. If you don't know what it is ask the secretary. Washington and Philadelphia know where we stand and have been asking the question, "What is wrong with Harrisburg?" The Dauphin County Medical Society has a membership of 156 and so far only nineteen have offered their services. What is wrong with Dauphin County Medical. Are we going to let them come and get us? It is theirs to do. Of the number who have offered their services and gone, three have been honorably discharged and one put on the inactive list.

Word has just been received from Capt. Frederic Smith who has been on the firing-line in France for some time. Captain Smith has been under fire, his entire detachment being killed, he was compelled to seek shelter in an abandoned dugout for a period of thirty-six hours, and finally under cover of darkness he succeeded in returning to the French lines. Dr. Smith was formerly from Halifax and was called to active duty last June and entered training at Ft. Benjamin Harrison, Indiana. During July a call came for medical officers in the French Army and Dr. Smith was one of the volunteers. Our best wishes go out to Dr. Smith for his safe return.

BULLETIN, ERIE

Base Hospital, Camp Lee, Va.

The work in this institution makes very apparent the fact that great harm has been done to many drafted men by the careless and superficial work of the physicians who are responsible for the physical examinations of recruits. There seems to be a prevalent idea among the examiners that they are not supposed to make a thorough, careful examination and that they have to pass on the physical qualifications of a large number of men in a limited length of time.

I should like to correct this idea. The examiners should insist on having a quiet room in which to examine chests and the orthopedic examinations should be carefully done by men who are skilled in this particular work. I mention these two particularly not because I wish to minimize the importance of the other examinations but because chest and orthopedic diseases are made worse by the strenuous conditions of army life and the subject may be permanently incapacitated before his C. or D. is finished and he reaches his home.

I believe if the examiner realizes that six or eight weeks may elapse from the time the man leaves his home before he is returned, they will do more careful work.

There are cases of tuberculosis of the lung here that were obviously active when the local board examiners passed them, which will never live to reach home again.

One of the most important duties of the examiners in the camps is to determine whether the disability arose before or after the time the man entered the army, or to use the army expression, was the disability in "line of duty" or "not in line of duty"? Careless work in determining this may enormously swell the pension roll.

This may give examiners an idea as to the type of men that should not be accepted.

The base hospital is now caring for about eleven hundred patients so you can see it is a very busy place.

Scott D. Gleeten,
First Lieut., M. R. C.

Jan. 23, 1918.

NOTES, NORTHUMBERLAND

There seems to be a slump in medical society interest during the present war. Many men are called from the ranks of the profession to join the ranks of the army, to do work for Uncle Sam. Our interest in them and the outcome of this great struggle seems to have taken our minds away from the professional work and interests in our society. The editor, however, feels that we need to kindle a revival of interest, and that the society may be inviting to our brethren on their return from camp duty, we must "Keep the Home Fires Burning" brightly.

The Program Committee and the officers of the society have endeavored to revive this interest by asking each member to contribute a four-minute talk on subjects that shall be vital to the growth and interest of our medical society. A list of these subjects can be found on the front page of this issue. However, you are at liberty to select any subject that you may choose in order to infuse some enthusiasm among our members.

You are also invited to bring any physician with you. Let this be a real Billy Sunday revival. If you are inclined to indulge in astounding epithets or brilliant climaxes, or magnificent rhetoric or ponderous cerebral emanations or plain common sense, let it be your choice and privilege to make some contribution to the interest of the next meeting.

The officers of the society are indeed solicitous that the interest may be aroused and the future of the society may keep pace with the wonderful work that our government is doing.

BOOKS RECEIVED

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

Medical Clinics of North America. Vol. I, No. 3 (The New York Number, November, 1917). Octavo of 346 pages, 37 illustrations. Vol. I, No. 4 (The Boston Number, January, 1918). Octavo of 401 pages, 128 illustrations. Philadelphia and London: W. B. Saunders Company. Published Bi-Monthly. Price per year: paper, $10.00; cloth, $14.00.

BOOK REVIEWS

A TEXTBOOK OF HUMAN PHYSIOLOGY, Including a Section on Physiologic Apparatus. By Albert P. Brubaker, A.M., M.D., Professor of Physiology and Medical Jurisprudence in the Jefferson Medical College. Fifth Edition, revised and enlarged, with one colored plate and 358 illustrations. Philadelphia: P. Blakiston's Son and Company. Price, $3.00 net.

Professor Brubaker's long and successful career as a college lecturer and teacher of physiology especially fits him for the authorship of an authoritative textbook on this subject. The popularity of his work is evidenced by the five large editions which have been printed. His aim has been to present his subject in a practical form that is easily grasped by the student and readily digested by the busy practitioner when used as reference. Those who wish to keep in touch with the progress of physiology will find that this work presents advanced knowledge on the metabolism of food principles; carbohydrate metabolism; the graphic registration of electric heart currents; the electric cardiogram; animal heat; internal secretion; cerebral localization; the autonomic nerve system; and other important advances. Less important matter has been eliminated, and no more than thirty-seven pages have been added to the text.

J. T. H.

A CLINICAL MANUAL OF MENTAL DISEASES. By Francis X. Dercum, M.D., Ph.D., Professor of Nervous and Mental Diseases, Jefferson Medical College, Philadelphia. Second Edition Revised. Octavo of 497 pages. Philadelphia and London: W. B. Saunders Company, 1917. Cloth, $3.50 net.

The first edition of this book came out five years ago, and the demand for it was so great that there was a second print within one year. A second edition is now called for because of the popularity of the work and the author's well-known teaching qualities. This second edition has been thoroughly revised and the various sections expanded so as to include the more recent views in regard to pathology and treatment. The chapter on the psychologic interpretation of symptoms has been rewritten and includes an outline of Freud's theory of dreams. The chapters on diagnosis and treatment are especially valuable from the standpoint of the general practitioner who is frequently called on to care for mental cases. The writer's style is so clear and logical, and his language so plain that the book interests, compelling attention to the end of the chapter. It is a book that talks directly to the point, without undue verbiage or the use of a great number of technical terms.

J. T. H.

ANNUAL REPRINT OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR 1917. Cloth. Price, postpaid, 50 cents. Pp. 169. Chicago: American Medical Association, 1918.

This volume contains the reports of the Council which were adopted and authorized for publication during 1917. It includes reports of the Council previously published in *The Journal of the American Medical Association* and also reports which, because of their highly technical character or of their lesser importance, were not published in *The Journal.*

In this volume the Council discusses the articles which were examined and found to be in conflict with the rules for admission to New and Nonofficial Remedies. Among these reports are discussions of such widely advertised proprietaries as Corpora Lutea (Soluble Extract), Wheeler's Tissue Phosphates, The Russell Emulsion and The Russell Prepared Green Bone, Trimethol, Eskay's Neuro Phosphates, K-Y Lubricating Jelly, Ziratol, Hepatico Tablets, Hemo-Therapin, Venosal, Surgodine and Kalak Water. A report on Iodeol and Iodagol covers 51 pages and illustrates the exhaustive investigation which the Council is often obliged to make of proprietary articles. Similarly illustrative of the Council's thoroughness is the clinical study of Biniodol, a solution of mercuric iodid in oil, and the investigation of Secretin-Beveridge, made for the Council by the physiologist, Professor Carlson of the University of Chicago. The volume also contains reports which explain why certain preparations, such as Alcresta Ipecac tablets, the German-made biologic products and antistaphylococcus serum, which were described in the last edition of New and Nonofficial Remedies, are not contained in the current 1918 edition. Those who wish to be informed in regard to proprietary remedies should have both the annual Council Reports and New and Nonofficial Remedies.

NEW AND NONOFFICIAL REMEDIES, 1918, containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan. 1, 1918. Cloth. Price, postpaid, $1. Pp. 452 + 26. Chicago: American Medical Association, 1918.

This annual should be in the office of every physician. It lists and describes all those proprietary remedies which the Council on Pharmacy and Chemistry has examined and found worthy of the confidence of the medical profession; that is, articles the composition of which is disclosed, which are exploited truthfully and which give promise of some probable therapeutic value. The description of each article aims to furnish a statement of its therapeutic value and uses, its dosage and method of administration as well as tests for the determination of its identity and quality. Articles of similar composition are grouped together and in most cases each group is accompanied by a general article which compares the members of a group with each other and with the established drugs which they are intended to replace. The description of the individual articles and the general discussions are written by experts and furnish information of a trustworthiness unsurpassed by any other publication. The book is especially valuable to the busy physician who desires a concise and up-to-date discussion of such subjects as digitalis therapy, the newer solutions for wound sterilizations, iron therapy, food for diabetics, the value of sour milk therapy and of the Bulgarian bacillus, the use of radium externally and internally, of arsphenamine (salvarsan, arsenobenzol, diarsenol) and neoarphenamine (neosalvarsan, neodiarsenol), of local anesthetics, and other advances in therapeutics.

In addition to this annual issue of the book, supplements are sent from time to time to purchasers. With this volume for ready reference, the physician will be able to determine which of the proprietary remedies that are brought to his notice deserve serious consideration. At least he will be justified to subject to close scrutiny those which have not met the requirements for acceptance for New and Nonofficial Remedies.

BUREAU OF MEDICAL EDUCATION AND LICENSURE

MEMBERS BY APPOINTMENT

John M. Baldy, Pres., 2219 DeLancey St., Philadelphia.
William M. Hillegas, Philadelphia.
Irvin D. Metzger, Pittsburgh.
Calvin L. Johnstonbaugh, Bethlehem.
Adolph Koenig, Pittsburgh.

Members Ex-Officio.

Nathan C. Schaeffer, Sec., Dept. of Pub. Inst., Harrisburg.
B. Franklin Royer, Harrisburg.

REVOCATION OF LICENSES IN PENNSYLVANIA

At the meeting of the Bureau of Medical Education and Licensure, held in Philadelphia, April 10, 1918, the following action was taken:

DR. WILLIAM LLEWELLYN OWEN

Revocation of right to practice medicine and surgery in the Commonwealth of Pennsylvania.

Cause: Conviction, on plea of guilty, to indictment before United States District Court "on a charge of conspiracy to commit an offense against the United States by depositing with an express company articles designed to prevent conception." And other charges of indictment.

DR. N. C. KARTUB

Revocation of license to practice medicine in the Commonwealth of Pennsylvania.

Cause: Conviction, on plea of guilty, "of murder in the second degree."

DR. FRANK J. KENNEY

Revocation of license to practice medicine in the Commonwealth of Pennsylvania.

Cause: Conviction, on plea of guilty, of charge of "larceny."

SOCIETIES

PITTSBURGH ACADEMY OF MEDICINE

Meeting of February 12

Ether Anesthesia. Dr. W. C. Maxwell: As early as 1795 ether was employed medicinally for the relief of asthma. For many years following this, ether was used by students in fun, the exhilarating stage being reached, and accidentally the third or surgical stage was reached in 1842. On Oct. 17, 1846, Morton administered it successfully for an operation in Massachusetts General Hospital in Boston. The first committee to attempt definite scientific work was appointed in 1864, twenty-two years after ether was first used as an anesthetic.

The preparation for the administration of ether is now considered quite important. Having the patient quiet in bed for twenty-four to forty-eight hours before administering, thoroughly cleansing the intestinal tract, keeping food from the patient for twenty-four hours, and having the patient somewhat under the control of the anesthetist before beginning, are important factors.

We have reduced the induction period to about six minutes for complete surgical anesthesia, where formerly we required about fifteen to twenty minutes. Holding the mask away from the face and dropping the ether very slowly for the first two minutes until the patient is assured that he will not suffocate (which patients seem to think is a necessary accompaniment), then by pushing the ether rather rapidly for the last three minutes, complete anesthesia can usually be accomplished in six minutes. In abdominal operations where the surgeon first examines the upper abdomen, manipulating the stomach and gallbladder, there is almost invariably a straining on the part of the patient so that if profound anesthesia is produced before the abdomen is opened, less ether will be required per hour of anesthesia.

Danger symptoms from too much anesthetic can be recognized by the pulse of the patient and the color of the skin, especially about the ears. The pulse, the color in the ears and the respiration suddenly becoming quiet and rapid where they have been stertorous as one would observe in natural sleep when the patient is sleeping very soundly, are danger signals which say stop, look and listen. If these untoward symptoms are recognized early, prompt stimulation given and withdrawal of the ether for a few seconds, I believe accidents from ether anesthesia will seldom occur. We believe that the hypodermic injection of one-sixth grain of morphin and $\frac{1}{150}$ grain atropin about thirty minutes before the beginning of anesthesia is of advantage in having the patient relax more quickly and in drying up the secretions in the air passages. For about 1,000 cases we have used lavage with sterile water, washing out the stomach until the water comes clear. We use the small sized stomach tube through the nose for this. Immediately after washing the stomach we pour through the stomach tube 2 ounces of sterile olive oil, leaving the same in the stomach. We have decreased the postoperative vomiting about 50 per cent. by this procedure.

In healthy and moderately healthy subjects the risk connected with ether is very slight. The reported fatalities have almost invariably taken place in exhausted individuals or those sick for many weeks with some septic condition. According to American statistics one death occurs in 5,623 administrations of ether by the drop or vapor method.

The first objection to any method of administration of ether is where the patient may have a marked idiosyncrasy for the drug. The respiratory disturbances and pathological changes in the respiratory organs with dyspnea are contraindications of prime importance. In lung and kidney disease, bronchitis, phthisis, dyspnea, and emphysema, and in ophthalmic operations, patients do better with some other anesthetic than ether.

Dr. S. A. Chalfant, in discussing: The preparation of the patient for operation is becoming less elaborate. It is a mistake thoroughly to deplete the patient with purgation, which often keeps the patient awake all night, thus causing loss of sleep and rest. The use of morphin and atropin is of advantage in quieting the patient. The use of olive oil in the stomach following washing is of advantage. Postoperative vomiting is due to ether and mucus from the mouth. For acidosis vomiting, wash out the stomach with soda solution and give soda by the bowels.

Dr. W. H. Mercur: I started a number of years ago to give soda for two or three days before operation, especially to neurotic children. In an article by John Bryant in 1913, I wish to know what Dr. Maxwell knows about closed ether and the color sign. I have been much interested in nerve blocking of the motor and sensory nerves resulting in the use of little anesthesia. Anesthesia of the trigeminal nerve may be procured by oil of mustard, inhalation of oil of mustard in one side of the nose for a few minutes will give anesthesia of the teeth and ear on that side for from four to five hours. I have found it advantageous when giving soda bicarbonate to also give a diuretic or laxative.

Dr. J. I. Johnston: Since the work of Heard and Brooks, I do not have the same respect for camphor. I believe that it should be used as one would use aromatic spirit of ammonia. Use of caffein hypodermatically in the form of benzoate or salicylate solution is the best for quick action.

Dr. J. R. McCurdy: Of great interest to the patient and surgeon is the preanesthesia treatment and postanesthesia treatment. During the operation itself the care of the patient is in the hands of the anesthetizer. The preanesthesia and induction period is of great importance. More than 90 per cent. of patients taking anesthesia fear it, and we as physicians may make light of it. Therefore, because of this fear, we should exercise great care and quiet in the handling of the patient. Preparation of the bowels and body is of importance. Flagg of New York gives castor oil two days before the operation, and the day before, a fairly liberal diet with one-half pound of candy. During the operation, see that the respirations are right. This is accomplished by care. For the past few years I have been using as a respiratory stimulant when needed a mixture of carbon dioxid ten parts, oxygen ninety parts. I believe that early postoperative vomiting is due to irritation of ether in the gastro-intestinal tract, while the vomiting after twenty-four hours is due to acidosis.

Dr. J. O. Wallace: In my orthopedic work I give an enema the night before operation and in the morning no purges. That patient is allowed regular diet before operation and two hours before operation a glass of milk or a cup of broth is given. Following operation the patient is allowed water from the start and if he vomits he is encouraged to drink tepid water to wash out the stomach. Postoperatively, where indicated, give soda bromids, paregoric, or codein.

Some Aspects of the Ophthalmia Problem. Dr. W. W. Blair: Ophthalmia neonatorum falls in the class of blindness that is accepted as being preventable. This was incontrovertably established by Prof. Credé as far back as 1884. For many years treatment along generally accepted lines has been most successful. Here we have a disease which is both preventable and curable, but in spite of these two facts it still prevails.

A study of the statistics furnished by the cases treated in a given period may throw some light on the subject; therefore I have reviewed the case records of those patients coming in my hospital service during 1917. There were in all, 24 cases of ophthalmia of the new-born. I shall not include cases of gonorrheal ophthalmia occurring in children from three to ten years of age, of which there were a number. Of the twenty-four babies, three were delivered by midwives, and twenty-one by physicians. This showing is assuredly not flattering to the medical profession, and yet it is directly in line with reports from various communities where the facts have been brought out.

The reply to the question, "Does the Credé method prevent ophthalmia," must be an unqualified affirmative, but this affirmative applies to the method of Credé, precisely as he insisted that it should be carried out. Turning to his own writing, we read as follows: "After the child has been bathed and before it is dressed, the eyelids are to be gently opened and a single drop of a 2 per cent. solution of nitrate of silver allowed to come in contact with the cornea; all further care of the eyes is to be omitted." Concerning the efficacy of the Credé method, something may be learned by referring to my series of cases. Credé method was used in ten cases; Credé not used in fourteen cases. At a glance this does not make out a very good case for the method; and should be explained; of the ten cases in which the prophylactic was used, six received the silver solution furnished by the department of health. In order to satisfy myself that the solution furnished by the department was efficient, six samples were secured, and submitted to the Pittsburgh College of Pharmacy for analysis. Prof. Koch kindly made an analysis of the samples furnished, and later submitted a report on the same to me. In substance the report shows that none of the samples were full 1 per cent. in strength, some falling as low as 0.75 of 1 per cent. It will be remembered that the directions laid down by Credé fixed on 2 per cent. as the proper strength of the silver solution, so that in advocating the 1 per cent. solution, we may have been too low (in fact, I think we have been); certainly the required solution should never go below 1 per cent.

When we note that in this series of twenty-four cases of ophthalmia, only three occurred in the practice of midwives, while twenty-one were delivered by physicians, it is suggestive at least to remember that today in this city the midwife is required by a ruling of the department of health to use a prophylactic, while the physician is at liberty to use it or not as he may elect.

As to methods of treatment, we observe perhaps more latitude than in the prophylaxis but the results have been in no way less satisfactory. Of first importance has been the recognition of the fact that all cases of ophthalmia should be treated in a hospital. The frequent copious douching of the conjunctival sac involves the employment of two nurses, one of whom is constantly on duty; the best practice, and one followed as a routine by us, is to remove mother and babe to the hospital, so that the dangers attendant on weaning the child are not added to its other troubles. Simply to emphasize the unquestioned advantage of hospital over home treatment, I may say that of the twenty-four cases in this series, nineteen were discharged with clear cornea, two had small corneal opacity, one had perforation of the cornea, one died on the second day after admission, and one was removed from hospital on the fourth day, so that omitting the one death and one removal there remain but three cases sustaining corneal damage, and two of these had corneal involvement on admission.

That our various hospitals are not alive to their responsibilities in this respect is also apparent. Within a week, inquiry was made as to the possibility of gaining admission to a number of hospitals in this community, for a case of ophthalmia. Eighteen hospitals were approached and their various attitudes toward the ophthalmia question tabulated. The management of fourteen reported that they had no provision for such cases. One hospital takes care of any cases that develop within its own wards but would not admit a case from outside. One would not reply to the inquiry; two were found to be prepared to receive and care for any cases of ophthalmia which may apply. This showing is quite similar to the report made by Holloway in Philadelphia a few weeks ago; in his list of forty-two hospitals there were but two returning an unqualified statement that ophthalmia neonatorum patients would be accepted.

In Holloway's report he notes that many institutions turn ophthalmia cases away because they do not treat venereal diseases; this reply came to me also in my efforts to sound our local institutions.

To reiterate, we are dealing with a disease which is both preventable and curable, and it is plainly manifest that an awakened interest along both of these lines would surely succeed in the practical elimination of the disease.

The principles of prevention are easily understood, but it appears that legal enactments would be the only way by which its benefits may be secured. It is to be hoped that through the combined efforts of the American Medical Association and the National Committee for the Prevention of Blindness some sort of a composite law may eventually be drafted. Such a statute should provide for the early registration of births (say within twenty-four or forty-eight hours); the compulsory use of a prophylactic solution of approved strength; the gratuitous distribution of such preparation; and the prompt reporting to the local health department of any case of babies' sore eyes.

But there will always be accidents, and carelessness cannot be entirely eliminated by statute; hence we must consider the second phase of the matter, namely, curability. Here the evidence is so overwhelmingly in favor of hospital care that I will confine my remarks to that side of the question. I would like to emphasize the significance of the attitude of our local hospitals in this matter. I feel that the position taken by them is a mistaken one, and should be corrected. My view is that the state has a right to demand that every hospital receiving financial support from state funds should be equipped to care properly for any patient with ophthalmia applying for admission. I know what this means in expense; for when mother and babe are taken in, and two nurses employed, as is demanded by the routine treatment, we find our little patient represents an outlay of about $10 per day, covering a period of from four to six weeks; this outlay, however, represents the price of a pair of eyes, and looked at from a purely commercial standpoint is a profitable investment. As indicated above, some of our hospitals refuse these cases not on account of expense but because they have rules which do not permit them to receive cases of venereal disease.

Here is a conception of ophthalmia which has always obstructed a proper view of the whole question; it has made the obstetrician hesitate to employ prophylaxis, for fear his action might seem to throw an implied suspicion on one or both parents; it has prevented the reporting of a beginning case of ophthalmia, and has obscured the whole matter. It will facilitate progress toward a desired end very materially when we are able to speak more positively of the bacteriologic phases of ophthalmia.

Dr. Schweinitz in a recent report states that about 65 per cent. of cases are due to the gonococcus of Neisser, the remainder being caused by other pus-producing organisms. In the cases here recorded, the bacteriologic findings on direct smear were as follows: Staphylococcus, three times; staphylococcus with xerosis, three times; gram-negative diplococcus, ten times; pneumococcus, two times; Koch-Weeks, one time; negative finding, five times.

A tabulation of our bacteriologic findings as developed through a study of the cultural characteristics of the various organisms would run beyond the scope of this report. From what we have observed, however, I think we are justified in objecting to the practice of classifying ophthalmia offhand as a venereal disease, which is so generally done, with the results referred to above. It would seem that where the state is required to spend large sums annually for maintenance and education of the blind, and is, on the other hand, called on for funds for the support of hospitals everywhere, these latter institutions should, as an economic measure at least, be required to lighten the demand on the former.

DR. H. A. MILLER, in discussing: The ophthalmologist may cure ophthalmia but it is the duty of the obstetrician to prevent it in his obstetric practice by instilling 2 per cent. silver nitrate in each eye at birth after which the eye is left alone for two or three days. A little secretion may appear, but this should not be cleansed away as meddlesome nursing at this time may cause a contaminating infection. This may be the explanation for the various kinds of organisms reported in Dr. Blair's series of cultures. I have given up the use of protargol and argyrol as I find silver nitrate more efficient. In the absence of silver nitrate I would use ice water irrigations after the method of Heckel, but I find this causes shock if used routinely. I feel that to report every birth before the expiration of twenty-four hours is too great a hardship for a busy obstetrician.

DR. J. A. LICHTY: I am impressed with the profit and saving to the state. There are in the state of Pennsylvania 5,000 to 6,000 idiots, imbeciles and morons, each of whom cost $4 or $5 a week for maintenance. It is impossible to prevent idiocy and imbecility but it is possible to definitely control blindness from ophthalmia.

DR. S. A. CHALFANT: The state at present requires admissions of venereal cases by those hospitals receiving state aid. Hence it would appear to advantage to class ophthalmia as a venereal disease.

DR. R. R. HUGGINS: It is encouraging to note the disposition on the part of the public to enact legislation to have prompt reports of all births so that the families may be notified of the dangers. It is discouraging to note that out of twenty-four cases, twenty-one are treated carelessly. Many cases begin insidiously, so they should be sent to some one who can treat them promptly. In time public opinion will demand proper care, so it is up to the physicians to hasten proper treatment.

DR. BOOTH: I would like to know of a simple efficient container for silver nitrate.

DR. BLAIR, closing: I do not know of any objection to the beeswax container. Some states furnish a corked bottle with dropper attached. I believe 1 per cent. solution too weak, that the solution should be 1½ to 2 per cent. It is possible to report all births within twenty-four hours by having cards in the bag and then report birth before leaving the house. An infant, which had been left for three days with sore eyes and then sent to the hospital, could have been saved a complete ulceration of the cornea had the family been warned in time.

FREDERICK B. UTLEY, Reporter.

WILLS HOSPITAL OPHTHALMIC SOCIETY

Meeting of April 2, 1918

Dr. William Campbell Posey gave the notes of a series of cases in which permanent quadrant and hemianopic lesions followed so-called migrainous attacks.

CASE 1.—Mrs. H., aged 40; two years prior to consulting the writer after a rather prolonged strain on her eyes at near work, and while she was suffering from intestinal toxemia, suddenly lost one half of her visual field. As far as can be ascertained, the outer half of the right field of vision was at first destroyed, but after a few days the peripheral field cleared and the loss was limited to a small section at the fixation point in each eye, so that when she read she could see but the first half of words and experienced great difficulty in seeing any small objects on her dressing table.

This interesting case has been at various times under the care of competent ophthalmologists and internists, but despite all the eliminating measures which have been undertaken, the central loss in her field of vision remains unaltered. Her error in refraction consists of a low grade of hypermetropic astigmatism, and with proper glasses vision is normal in each eye. Her extra-ocular muscle balance is also normal. The eyegrounds are negative. Her fields of vision show no limitation in the peripheral field, but definite hemianopic defects at fixation in each eye, the scotomatous areas extending from fixation to the right.

The patient has always had a poor digestion and for years has been under care for intestinal toxemia. Prior to the attack which resulted in the permanent loss of vision, she had repeatedly suffered from migrainous seizures, always associated with head pain. Scintillations of light accompanied some attacks, in others hemianopic blindness was the only symptom present. At times the blind areas would be on the right side, at times on the left. As far as she could remember, though there had been repeated attacks of sick headache, there had been no visual obscurations since the permanent areas of hemianopic blindness manifested themselves.

CASE 2.—Mrs. E., aged 46; had been subject to migraine for many years. Following an unusually severe attack, there had persisted a right lateral homonymous defect in the upper quadrant of the fields of vision in each eye.

Case 3.—Mrs. B., aged 33, had slight homonymous hemianopsia with preservation of a small area in extreme periphery of the right field followed by a severe attack of pain in the left side of the head, and accompanied by loss of sensation and motion in the right arm and leg. Sensation returned in the paralyzed side about two hours after the attack and motion some time later, but the visual defect persisted.

Dr. Posey referred to a number of other cases which he had found in the literature on this subject and to which he had referred in a paper before the Section of Ophthalmology of the Baltimore City Medical Society in 1915.

Dr. Posey said that there is ample evidence in the literature to the effect that migraine may be the exciting cause of organic brain disease, and that an area of softening of the brain may follow, which may manifest itself by a permanent paralysis, aphasia or hemianopsia. While such lesions usually occur in individuals who are predisposed in consequence of disease of the walls of the blood vessels, it would seem that in certain cases the vascular lesions may occur in young persons and even in some adults with healthy vessels. Caution, however, must be observed in ascribing even an exciting rôle to migraine in cases of organic brain disease, as it is not unlikely that independent disease of the blood vessels is responsible for the resultant symptoms, and the migraine merely coincident.

As bearing on Case 1, Dr. Posey gave the notes of another case already reported by him, in which right homonymous hemianopsia, which was confined to the macular regions, followed an apoplectiform seizure in an arthritic male 50 years of age. He recalled that this defect in the visual fields in association with cerebral disease was first called attention to by Mills, in 1898, and that Wilbrand, in 1907, reported eight cases observed by him and gave a detailed analysis of the condition. This latter author is of the opinion that the scotomas under consideration appear when an end artery in or near the cortical center of the visual area becomes occluded, and believes that the calcarine artery is the vessel chiefly involved.

Dr. Posey also gave the notes of a case of recurrent oculomotor palsy, or migraine ophthalmoplegique (Charcot), which had recently been under his care. This unusual affection of the central system occurred in a girl 13 years of age, the first attack with implication of the eye muscles occurring when she was but 6 years old. According to the statement of the mother, the first attack was attended with severe head pain, following which the left eyelid drooped and the patient complained of double vision. The left eye also deviated outward. There had been five recurrences of these symptoms, the paralysis in each instance passing away in from ten to fourteen days. No unusual visual phenomena attended any of these attacks. Her general health has been poor and an examination of her blood revealed marked chlorosis.

Dr. Posey referred to a second case reported by him and Dr. Spiller in 1905, namely, that of a physician 31 years of age, who presented almost complete ptosis of his right upper eyelid and a paretic condition of the inferior oblique and the internal rectus muscle of the same eye. His ocular symptoms dated from 14 years of age, when the patient began to suffer from spells of dimness of vision, associated with flashes of light on the side, and followed by headache and nausea. These seizures apparently were typical attacks of migraine. They occurred on both sides of the head and were brought on by gastric disturbances, overuse of the eyes, and general fatigue. At the end of two years the character of the attacks changed as the spectra disappeared, though the pain in the head and the gastric symptoms still persisted. While in attendance at the medical school, the pain in the head was almost constantly present, especially over the right eye, which led him, as mentioned above, to seek relief from glasses. His health was otherwise good.

Ten months before he came under the observation of the speaker, after continuous professional work of more than usual severity, following an attack of pain in the right eye which had persisted for a few days, he saw double for the first time. He is unable to say whether the attacks of migraine had been more aggravated just prior to the attack of diplopia than usual, but he is confident of the preceding pain in the eye without the migrainous symptoms. At the time of the attack the double vision was more marked when he looked to the left and above, but there was no ptosis. This diplopia persisted several weeks and then gradually passed away, leaving no apparent ocular disturbance, his eyes giving him no further trouble until July, when a return of the double images was again remarked. The double images were of much the same character as in the preceding attack, but there was the additional symptom of the drooping of the upper lid of the right eye. At first the ptosis was intermittent, but in the course of a few weeks it became permanent and almost complete, until November 1, when the lid raised for several days, but dropped again, however, and the eye remained closed until November 24; the lid then again raised and resumed its natural appearance and so continued one week, when it began to partially droop, in which condition it still remains.

On account of the unusual course of the palsy, the attack of diplopia six months previous to the onset of the present palsy being also occasioned in all probability, as judged by the position of the double images, by an involvement of the right oculomotor nerve, it was thought best to ascertain whether there existed any further involvement of the nervous system. The patient was accordingly examined by Dr. Spiller, who found that he closed his eyelids well, drew up the corners of his mouth fairly well together, but not very well separately. The tongue was protruded straight, was moved freely, and showed no fibrillary tremors. The masseter contracted well on both sides. Sensation for touch and pain was normal in the two sides of the face.

He had no weakness of the limbs. The patellar reflexes were prompt but not excessive, the right a little more than the left. The Achilles jerks were prompt but not excessive, and he did not have ankle clonus. Sensation for touch and pain was normal in the hands and feet. The gait and station were normal with the eyes open or closed. He had possibly an area of slight hypalgesia on each side of the thorax about the nipple line; this, however, was not positive, and tactile sensation here was normal.

The patient when questioned gave further information regarding the attacks that he had had when he was about 15 years of age and later. In these he would become completely blind, and would not recognize an object across the room, although he could see light faintly. These attacks lasted about half an hour, and were followed by severe headache. During the blindness he saw flashes of light. The blindness disappeared before the headache developed. He had not had any of these attacks during the past ten years.

Dr. Posey referred at some length to the literature on the subject of oculomotor palsy and said that Möbius assumes that the lesion is at the base of the brain and combats Charcot's opinion that the periodic oculomotor palsy is a form of migraine (migraine ophthalmoplegique), and he believes the migraine is only symptomatic, as it may be in epilepsy or in paretic dementia. Migraine may cause oculomotor palsy, but in periodic oculomotor palsy the lesion causes the palsy and the migraine is an aura. How migraine may cause the palsy is unknown. In most cases of periodic oculomotor palsy the paralysis occurs in the first attack.

In the cases in which a necropsy has been obtained, basal hemorrhagic pachymeningitis was found in one case, a tubercle, a fibrochondroma, and a neurofibroma in others. Oppenheim thinks that the periodic oculomotor palsy is related to migraine, as Charcot believed, and dependent on vasomotor disturbance. Spasm of the vessels obstructs the blood supply and causes the paralysis, or overfilling of the vessels compresses the nerve. Attacks may occur without permanently injuring the nerve, but finally degeneration and inflammatory changes occur in the nerve and the paralysis persists. Such vascular disturbances may cause exudative processes or tumor. The symptoms may be progressive, or may be arrested, or may disappear.

In the report of the case cited, Dr. Spiller pointed out that some very important distinctions will be noticed between the descriptions of Möbius and Oppenheim. A lesion may readily cause a paralysis of only certain branches of the oculomotor nerve, even though it be a tumor at the base, and a partial palsy should not be sufficient reason for exclusion of a cause. Dr. Spiller also said that one must always remember that a recurrent oculomotor palsy may be the first sign of a general organic disease of the nervous system, like tabes or multiple sclerosis, but in the case reported no sign of such disease could be found.

Dr. William Zentmayer, in discussion of Dr. Posey's paper, said that among other phenomena of ophthalmic migraine are the phosphenes and other sensory irritation symptoms such as the so-called fortification spectra; also the presence, in the blind area of the field, of visual hallucinations. He believed that Dr. Posey himself had once reported a case in which the patient saw a bull's-eye in the hemianopic blind field.

A rare field defect noted by Dr. Zentmayer in a man 45 years of age, who had been subject to migraine since childhood, was a temporary ring scotoma in both fields. Later the defect became hemianopic in one eye, but retained its half-ring form. The patient died from pneumonia about a year subsequent to these observations.

Dr. William Zentmayer presented a case of epithelial dystrophy of the cornea. The patient, who was seen at Wills Hospital, was a woman 65 years of age. Her vision had been slowly failing for about one year. There was no history of inflammation nor was she engaged in any occupation irritating to the eyes. Her general health was excellent. Vision, O. D. 15/30, O. S. 15/200.

In each cornea there is an ovoid area measuring 6 by 8 mm., in which the corneal epithelium is cloudy and presents in places dart-like elevations, which catch the light in oblique illumination and look almost crystalline. The cloudiness is due to pin-point opacities. The small elevations are probably due to changes in Bowman's membrane. The cornea is not anesthetic. The fundus is normal. In the skin of the lids there are patches of xanthelasma. The Wassermann is negative. The von Pirquet is strongly positive.

Harold W. How, Secretary.

COUNTY SOCIETY REPORTS

DELAWARE—MARCH

The March meeting of the Delaware County Society was held at the Chester Hospital on March 21, Dr. C. Victor Janvier presiding. After the usual routine business a very helpful and interesting paper was read by Dr. Seth. A. Brumm of Philadelphia, on "Things That a General Practitioner Should Know About the Ear, Nose and Throat." Dr. Brumm spoke briefly about the development of this branch of medicine, which dates its history to 3500 B. C. The physiology of the upper respiratory tract was reviewed and its importance emphasized as the portal of entry of systemic infections. In obstructive diseases of the nose and throat, it is important that surgical work be done by skilled men. The "common cold" to which so little attention is usually paid needs careful treatment. Dr. Brumm considered adrenalin to be of distinct harm in these acute inflammations, as the immediate relief experienced is very quickly followed by a vasomotor reaction, which makes the condition worse than before using the drug. The remarkable relief afforded in cases of atrophic rhinitis by the use of dichloramin-T was discussed, as well as the care needed in examining the nose in injuries of that organ. Many cases of obstruction owe their origin to improperly treated nasal fractures.

In discussing the larynx, Dr. Brumm emphasized the need of skilled examination for diseases of that organ, and said that especial care should be exercised in patients with whom the chief complaint is aphonia, as this is often the earliest symptom of a laryngeal tuberculosis or syphilis. He also discussed the relation between middle-ear and systemic infections. The need for early recognition of acute otitis media and for its serious complications was clearly discussed. He cautioned for watchfulness in acute otitis media so that one would discover early tip tenderness, postauricular swelling and increase in the discharge or sudden cessation of the discharge with increase in pain, both of which combinations mean immediate surgical intervention.

The importance of the vestibular apparatus to the subject of vertigo with the interesting Bárány tests were also discussed. The paper was very helpful and was thoroughly enjoyed by the members.

George B. Sickel, Reporter.

PHILADELPHIA—FEBRUARY

The Philadelphia County Society met February 27, at 8:30 p. m., President Hammond in the Chair.

"X-Ray in Fractures" with a lantern demonstration was given by Dr. Henry K. Pancoast. Notwithstanding the fact that the diagnosis of fractures is one of the oldest procedures of roentgenology, improvements in technic are still being made. It is probable that after the war is over the fluoroscopes will be used to a larger extent in the correction of deformities in fractures, but they should not be depended on for diagnosis. Great care will have to be observed in protection against burns. The diagnosis of fractures of the skull and spine has been improved to a very considerable extent in recent years. In the diagnosis of spinal fractures two views of the spine should always be made whenever possible. Many crushing injuries of the vertebral bodies will escape notice unless examined laterally as an anteroposterior view frequently fails to show such a fracture.

Dr. George M. Dorrance presented a communication on "The Treatment of Fractures of the Jaws by Means of Dental Appliances."

"Correction of Deformity in Fractures" was given by Dr. T. Turner Thomas. Of most importance in the correction of fracture deformity is the knowledge of the force producing the fracture. The theory of muscle pull, which prevailed for many years, seems to be yielding its place to the theory of the fracturing force as the cause of the deformity. One looks in vain, however, for positive statements against the former or in favor of the latter. The great difficulty lies in accounting for the force which nearly always produces the same deformity in each of the common fractures and dislocations (a dislocation is merely a fracture of the skeleton at a joint with displacement of the fragments). The tendency is to assume that the character of the fracturing force varies widely, but if this were so and the deformity due to the fracturing force, the deformity would vary with the force applied. What kind of a force can essentially always produce the same deformity in fracture of the clavicle, dislocation of the shoulder, fracture of the surgical neck of the humerus, supracondylar fracture of the humerus, dislocation of the elbow, and Colles' fracture? There is only one with which we can hope to meet this condition, the fall on the hand. We accept it now for practically all Colles' fractures and must eventually accept it for nearly all the fractures and dislocations of the upper extremity, or give up the idea that their typical deformities are due to the fracturing force. When we know the fracturing force we shall reduce the deformities by dragging the displaced fragment back into its normal place through the same path by which it was driven out, but in the opposite direction, just as Allis did with dislocations of the hip joint. I have applied this principle with much satisfaction in a group of fractures and dislocations.

"The Treatment of Fractures by the Orthopedist" was given by Dr. Harry Hudson. I agree with Dr. Thomas that the mechanical cause of fractures of malposition is the blow and not the muscle pull. The deformity is merely retained by the muscle and not caused by it. I am inclined to divide the life history of a fracture into three periods: (1) the beginning of the condition, extending during the time of the acute symptoms and possibly to the beginning of the formation of callus; (2) the interval to the firm fixation of bone by fibrous or bony ankylosis; (3) that period which I have pleased to relegate to the orthopedic surgeon, unless further operative treatment is required. Frequently in the first period effort is made too soon to reduce the fracture. There is more or less bruising, nervousness, muscle spasm, etc., and you fail to get the cooperation of the patient. These difficulties may be avoided by waiting, and the dangers of a short wait are not so great as might be supposed. I am thoroughly convinced of the value of rest for the patient for a short time before undertaking the manipulations of reduction. During the period of waiting the surgeon should acquire a full knowledge of the condition and undertake the reduction with the same confidence in his methods as if he were doing a surgical operation; otherwise he will not have the cooperation of the patient which is often essential. In the setting of a fracture too often the surgeon has in mind some classic condition and looks for a classic method of reduction. If he will realize that something is to be gained by manipulation, molding, slow intensive force, he will be more successful than in an effort to follow classic methods. After the setting of the fracture I use with great satisfaction the plaster-of-Paris splint which is easily molded to meet the indications. I believe thoroughly in massage and those means to preserve the blood supply of the injured limb during healing, feeling that they decrease that long third period sometimes seen in the treatment of fracture.

"Fractures in the Newborn" was given by Dr. Edward P. Davis. Fractures in the newborn may be divided into complete and partial. It is to the credit of medical science that complete fracture in the newborn is of rare occurrence. Pelvimetry, and cesarean section in proper cases, have ruled out version in contracted pelvis responsible for a number of fractures. We have to deal then with incomplete fractures as a rule. These may be divided into fractures of the cranium and those of other parts of the body. In the cranium we must recognize that we must distinguish between the effects of birth pressure without fracture and with fracture. A depressed fracture of the cranium may be treated at once by making a small incision over the point of depression and raising the bone. This is followed by cessation of all symptoms. Other fractures of the cranium are occasionally those of the base which may be produced purposely by craniotomy, and those arising in difficult extraction when the operator has misjudged the proportion of the child to the pelvis and attempts to drag too large a child through the pelvis. Fractures of the extremities in the newborn are almost always of the upper extremities. It must be borne in mind that in fracture of the newborn we have to deal with the forces of development and we must not make the mistake of diagnosticating fracture when failure in development of the fetal skeleton has before labor predisposed to fracture. Fractures in the newborn may subject the attending physician to criticism and possibly to medicolegal action, or to the threat of it. But unless the fracture has occurred through very marked neglect in the effort to ascertain the size of the maternal pelvis or to diagnosticate engagement, or other fault in management, we recognize that in some cases injury to the skeleton is inevitable if delivery is to be effected with preservation of the life of the mother and child. At the present time, however, fatal fractures in the newborn have become exceedingly rare.

Dr. Richard C. Norris, in discussing: Dr. Davis has stated that while fractures in the newborn have lessened there is still a group of cases to be seen in spite of the obstetrician's skill. In cases in which I suspect fracture I do not rely on physical examination but use the roentgen ray. This is especially applicable in suspected fracture of the clavicle. Fracture of the humerus will sometimes occur in extending the arms in the breech case. In cases in which after a difficult labor I find the slightest sign of deformity I have a roentgenogram taken. In the medicolegal aspects it must be remembered that the most skilful man will sometimes have these fractures occur; and that there are changes in the bones in some infants which predispose to fracture. Any doctor who goes on the stand as a witness in a damage suit in such cases should be most cautious in expression of his opinion that in any particular case the injury has been due to lack of knowledge and precaution. Injury will occur in the hands of the very best men. Early diagnosis by use of the roentgen ray is of the first importance.

Dr. George P. Müller: Dr. Dorrance says that many fractures of the lower jaw are not reduced. I have been able to reduce these fractures but the difficulty has been to keep them reduced. I, therefore, send them to Dorrance who has the apparatus to maintain reduction. I agree with Dr. Hudson regarding the time following the injury for reduction of the fracture. While I used to think that reduction should be done early before the muscle spasm began I now think it better to wait for 24 or 48 hours and then with full knowledge of the individual case proceed with as much care as in the consideration of duodenal ulcer. The after-treatment in the matter of massage and exercise is also to receive careful attention.

PHILADELPHIA—MARCH

The Philadelphia County Society met March 13 at 8:30 p. m., President Hammond in the Chair, and presented a symposium on Pneumonia.

A paper on "Bacteriology and Serology" was given by Dr. John A. Kolmer. Lobar pneumonia ranks next to tuberculosis in death rate and is endemic throughout the entire world. Certain races of people are known to be more susceptible to it than others, notably, the South African black. It is also known that raw recruits in the army are particularly subject to lobar pneumonia according to our experience with the troops on the Mexican border a year or two ago. The pneumococcus is known definitely to cause 90 per cent. of this condition clinically diagnosed as lobar pneumonia. I am speaking now particularly of the adult. The other 10 per cent. may be caused by the streptococcus, the staphylococcus, or other organism. The more experience we have, however, the more carefully cases are studied, the more we are convinced that the organism which we call the pneumococcus is practically the sole etiological agent of lobar pneumonia.

Our knowledge of how the pneumococcus produces pneumonia is quite limited. It is well known from the original researches that pneumococci may be found in the mouth, but we have no clear knowledge on how the pneumococcus produces the pneumonia. Careful blood pressure works show that in about 50 per cent. of cases the pneumococcus may be found in the blood. Whether it first enters the blood stream by lowering of vitality or exposure to cold and localizes by tissue selection, or is transmitted through the alveolar spaces from the nose and throat is still an open question. Experimentally we can produce pneumonia in our laboratories but the mode of its production has no analogy to our knowledge of the disease in the human being. When the pneumococcus has located in the lung it produces the type of exudative ulceration known to all of us familiar with the pathology of lobar pneumonia. The symptoms are not only the local disturbances produced by the filling up of the lungs with exudate but it is also possible that the pneumococcus by disintegration liberates a poison within the bacterial cell which entering the circulating fluids of the patient produces intoxication. In addition to the toxins produced by the pneumococcus it is highly probable that part of the clinical picture of pneumonia is due to the absorption of products from the inflammatory exudate. We have been particularly interested in this phase of the pneumonia problem during the past year and our experiments would indicate that the exudate filling the alveolar spaces contributes a poison which plays a part in the symptom complex of lobar pneumonia. We also find in the urine of pneumonia patients a product of the pneumococcus.

The four different types of organisms classified as pneumococci are doubtless familiar to all present. Type IV is the type generally found in the mouth of normal individuals and is less virulent than the other types. Type I is highly virulent and produces about 33 per cent. of the cases of lobar pneumonia, particularly in this part of the country. Type II also produces about 33 per cent.; Type III, about 13 per cent., while Type IV produces about 20 per cent. In children these percentages are slightly different, but our knowledge here is quite incomplete because of the difficulty in securing sputum for diagnosis. According to the work done, Type IV produces the largest percentage of pneumonia among children. The laboratory has also aids to offer regarding prognosis. Based on a series of four or five hundred cases the relation of mortality to Type I is about 25 per cent.; to Type II, 32 per cent.; Type III, about 45 per cent.; Type IV, 16 per cent. Cases showing the pneumococcus in the blood stream have the gravest prognostic outlook.

The dust of bedrooms in which lobar pneumonia patients have been treated contains the pneumococcus in from 50 to 60 per cent. of instances. It is of particular importance from the standpoint of public health and the epidemiology of lobar pneumonia that it be regarded as an acute infectious disease due to the introduction of a germ from without similar to the production of diphtheria by acquiring a virulent diphtheritic germ. The disease is very properly regarded as reportable, and in certain large cities of the United States it is quarantined. There seems to be sufficient information to warrant the physician in regarding his patient as a potential focus for the spread of lobar pneumonia. Not all cases can be traced to contact with the previous case, but studies indicate that there are carriers of the virulent pneumococci, that patients may be carriers, also those in attendance on such patients.

"Symptomatology and Diagnosis," was given by Dr. Ross V. Patterson. Pneumonia of typical type offers no diagnostic problems to the practitioner of even short experience. Perhaps 80 per cent. of the cases of croupous pneumonia run a typical course, are characterized by easily recognized symptoms and easily demonstrated physical signs. It is in the remaining 20 per cent. that the real clinical problems arise and that the diagnostician finds opportunities for the exercise of his art. In a study of the clinical picture of pneumonia it must be remembered that it is a disease of protean manifestations and that there are many divergences from type. There is not a single symptom usually seen which may not be absent and in some forms of the disease the majority of what are recognized as classical signs are entirely absent. The symptoms are dependent on the infection, the toxemia, the extent and distribution of the lesions and on the individual and his personal peculiarities.

In children apex pneumonia is apt to be attended with symptoms suggesting meningitis and in some cases such diagnosis has been made. In double pneumonia we usually find that one lung is invaded one or two days after the first. This second invasion, however, is not as a rule attended by chill, nor necessarily with increased toxic symptoms. There seems to be no very definite constant relationship between the extent of involvement in the lungs and the general constitutional symptoms. In massive pneumonia the lungs become completely airless and the physical signs simulate somewhat those of pleurisy. Occasionally the lesions go from one part of the lung to another or from one part of the lobe to another and we have various stages represented in the same or in both lungs. In abortive pneumonia the onset is sudden and violent, terminating even after a course so short as two or three days. This is the type seen often in able-bodied men. In the asthenic form, on the other hand, the patient is overwhelmed by the toxins, and symptoms resembling those of typhoid are present. The croupous pneumonia of childhood is often different from that seen in adults; it is pseudolobar in type and characterized by markedly nervous symptoms, often simulating meningitis. The character of pneumonia in the alcoholic is dependent on whether it occurs in the steady drinker or the subject of an alcoholic debauch. In the steady drinker the onset may be quite characteristic, but the tendency to development of nervous and uremic symptoms sometimes complicates the clinical picture. After the alcoholic debauch in the steady drinker the clinical picture may soon take that of delirium tremens. Then we have the variations which occur in the terminal pneumonias in the course of chronic debilitating affections, such as tuberculosis, arteriosclerosis, diabetes, myocardial conditions in which the onset is not characterized by chill and the disease is often not recognized. The intercurrent pneumonias as seen in the acute infections like typhoid, diphtheria or influenza, are apt to be due to the specific organism of those diseases and differ in type from the ordinary croupous pneumonia as we see it when due to the pneumococcus.

"Pneumonia in Childhood," was given by Dr. Harry Lowenburg. In discussing pneumonia as we find it in children we must address ourselves to the two types, pulmonary and lobar. With reference to diagnosis of lobar pneumonia, in my experience convulsions rarely occur in the onset and I rarely see chill; but the child suddenly becomes acutely ill more often with gastric disturbance than nervous phenomena. Physical signs are sometimes delayed for five or six days. Therefore this class of case occupies an important position in dealing with the so-called obscure temperatures found in children. It is important to note that the evidences of consolidation are not always in evidence early. I believe it high time that we discard the term of central pneumonia and also disregard, as a possible clinical entity, pneumonia without physical signs. Either the physician is unable to detect such signs or he is dealing with some other condition. With reference to the central pneumonia, so-called, roentgen-ray studies have proved that most pneumonias in children begin as subpleural manifestations and that the auscultatory signs of consolidation do not appear until the consolidated area touches the hilus of the lung. The consolidated area acts as a transmitter of the sound from the trachea to the ear. Until this is made complete the signs of tubular breathing are likely to be in abeyance. Therefore, I believe we should no longer speak of central pneumonia. In the beginning of these cases we learn most by percussion, and the experienced clinician can feel a pneumonia. Abdominal pain is a very common symptom of pneumonia in children and a very misleading symptom in cases in which the physical signs are late in appearing. It has been my experience in at least three cases to be unable to decide between pneumonia and appendicitis, and I had splendid company in my dilemma. In the differential diagnosis, therefore, we should search diligently for physical signs in the chest and make speedy use of the roentgen ray. It is important also not to neglect a rectal examination and by this method tenderness on the right side can frequently be demonstrated. In none of the cases, however, can we be certain of our diagnosis until the patient has recovered, has been operated on, or has died and been posted. In children the pulse respiration ratio is of no diagnostic value unless counted during sleep.

The most important complication of lobar pneumonia is fluid. In the presence of a diffuse area of impairment associated with a marked sense of resistance on percussion out of proportion to the degree of dyspnea the diagnosis of effusion is probably correct. I regard this phenomenon of vastly more importance than the changing of the level of the area of dulness with change of position of the patient. I believe that more children with lobar pneumonia are assisted on the downward way by over-treatment and overstimulation than in any other way. I believe we should maintain a "masterly inactivity," carefully watch our cases, and adopt as I have done in my hospital service a four-hour interval. At the end of that time the pulse and respiration are recorded, the indicated medication is given, the patient fed and let alone. The bowels, of course, should be opened daily. In bronchopneumonia the child should be put in a room with fresh air that is not too cold. I have no use for stimulants in pneumonia, except perhaps just before the crisis. I believe that rest is the *sine qua non* in the conduct of patients. They should be given morphin or codein when restless, provided there is no contraindication. It is my convicton that rest and "masterly inactivity" will bring better results than overtreatment.

"Treatment of the Pneumonias" was given by Dr. S. Solis Cohen. I have chosen the term "pneumonias" because almost every patient presents a different aspect, and clinicians, bacteriologists and pathologists have recognized certain quite distinct types of the disease. The policy of "masterly inactivity" which has proved so successful in pneumonia in childhood in the hands of the last speaker has proved very disastrous in the hands of the majority of the profession in lobar pneumonia in adults. It has been shown by statistics that the mortality rate of pneumonia has grown progressively worse with the progress of medical science. Pretty much all over the country two years ago the policy of "masterly inactivity" or the expectant treatment resulted in a death rate of from 40 to 60 per cent.; whereas at the time Osler went over the statistics at the Pennsylvania Hospital, it was shown that under various methods of treatment the average mortality was about 25 per cent. It is said that every patient with pneumonia begins to die or recover from the moment of infection. While, however, the process of recovery may be impeded, the process of death and decay may also be checked and recovery aided. The same factors may be potent for evil or for good according to the intelligence with which they are applied. The patient should be carefully watched for the dangers likely to occur. Cold fresh air to the aged and to the alcoholic is fatal, but for the average patient in good condition cold air as well as fresh air is beneficial. Fresh air is best obtained by putting the patient on the roof, covering the roof only when storms demand it. The patient must be kept thoroughly warm in his bed.

The serum treatment in Type I infections has proved better than any other treatment that has been used, and I believe the rate of mortality is anywhere from 5 to 10 per cent. At Chattanooga I was told that one out of thirty-one patients died when treated with this serum. The polyvalent serum does not seem to be highly successful. The next form of specific treatment is that of the bacterins. That word, bacterins, is not a proprietary term. It was introduced by me, coined by me, given to the profession by me and to any manufacturer who chooses to use it. I have seen the most contradictory statements in discussions of the value of the vaccine or bacterin treatment. Then came the difference in type and the assertion that the vaccine to be useful must be specific. For the last three or four years I have been using the bacterins early with increasing frequency and I have for that length of time been prepared to say that they fulfil the first Hippocratic rule—they do no harm. We are justified in making experiments with a therapeutic measure which offers some prospect of success, provided we know that it does no harm.

I was at Fort Oglethorpe and went through the hospital which is under the care of Dr. Charles H. Smith and Capt. Arthur Dare, and with them is Dr. D. H. Bergey, assistant chief of laboratory. The organization and the work of the hospital are the best I have ever seen. Dr. Dare, with the consent of his superior officers, put into execution at the hospital the treatment of the pneumonias with a mixed vaccine, and in more than 100 cases of lobar pneumonia treated with this vaccine the death rate was less than 6 per cent. Midway between the vagueness and futility of the expectant treatment and the certainty of the specific treatment is that to which I have given the name of the definite treatment. This consists in the use of medicine and hygienic measures, not haphazardly, not merely after a period of "watchful waiting" for dangers to occur, but in a definite association for definite purposes and in advance of the dangers. It substitutes preparedness for locking the stable after the horse is gone. It follows the doctrine of Jacobi, who said before this society before the days of antitoxin, "The great danger in diphtheria is heart failure." The time to treat heart failure is before it happens. The time to treat the dangers of pneumonia is before they happen. That has been the basis of that treatment which I have gradually assumed and to which I have given the name of the definite treatment. It combines the use of fresh air, all necessary therapeutic measures, good nursing and hygiene. Outside of Blockley in a series of over 400 cases the mortality under this treatment has been less than 16 per cent. At the Jefferson Hospital, where we get the best results, the mortality has been less than 8 per cent.

Dr. A. C. Morgan, in discussing: The diagnosis of pneumonia should be made before the physical signs appear. The earlier the serum or specific treatment is given the better is the hope for recovery. The previous history of the patient should impress us, since we know that pneumonia has a tendency to recur. A patient with such a history who develops marked coryza with prostration disproportionate to the symptoms should be treated as in a case of suspected pneumonia and be given the serum or vaccine dosage at once without waiting for physical signs. Frequent swabs of the nose should be made to determine as quickly as possible the strain. There has been apparently an increase of the ether pneumonias within the past year. This may be due to lack of care in operative technic; or, possibly, because of the tremendous need for ether throughout the entire world, there has been some unintentional contamination in its manufacture. I think the discussion of pneumonia may be summed up under its mechanical and toxic features. In a patient with a myocardial degeneration but little pneumonia from a mechanical point of view is required to produce a fatal termination of the disease.

Dr. John F. Sinclair: I agree with Dr. Lowenburg in what he has said regarding the pneumonias in children. I regret that he did not lay more stress on the prophylaxis of pneumonia in these patients. I am convinced that one of the reasons for the greater frequency of pneumonia in children seen in the hospital and dispensary than in private practice is the neglect of the care of the nose and throat. If at the first appearance of coryza or pharyngitis the condition were treated I believe the incidence of pneumonia among children would be markedly decreased. I also believe with Dr. Lowenburg that central pneumonia is a term we have no right to use regarding the pneumonias of childhood. This may not obtain in the pneumonias of adult life. I would emphasize also the value of light percussion in eliciting the pneumonic area. The puzzling point of abdominal pain has been well stressed. The complication of otitis media, not here mentioned, has been found in a small series of cases of lobar pneumonia to have been present far in excess of 18 to 20 per cent.

WARREN—APRIL

The Warren County Society met April 16, with a fair attendance. Dr. M. T. Smith gave the result of his experience in the treatment of fractures. The other members present all entered into the discussion. Fractures of the neck of the femur in the aged are often followed by death, but the discussion elicited the fact that an unusual number of such patients in this vicinity have recovered with fairly good results. If the extreme immobilization could be relieved or avoided and if the patients could be gotten out of the recumbent position early, much better results, as far as danger to life itself, could be obtained. One case of recovery with good use of the limb, in a man nearly 100 years old, was reported by Dr. Robertson.

This society has enrolled in its membership nearly every doctor in the county. We also have a fair proportion of our men in the military service. The hospital is very short of doctors, and if Dr. Darling goes the condition will be quite serious. Dr. Mitchell claims that it is almost impossible to obtain new assistants.

M. V. Ball, Reporter pro tem.

NECROLOGY

In Memoriam—Frank Judson Bardwell, M.D.

Dr. Frank Judson Bardwell, Tunkhannock, died April 11, following an operation for the removal of gallstones. Dr. Bardwell received his preliminary education at the Tunkhannock High School, then went to Yale University, where he was graduated in the medical department in June, 1891. He spent one year as intern at the Bridgeport Hospital, Bridgeport, Conn., and practiced medicine at that place for a short time, locating at Tunkhannock in the fall of 1893.

He was a member and ex-president of the Wyoming County Medical Society, a member of the Medical Society of the State of Pennsylvania, and of the American Medical Association; an ex-United States pension examiner, and examiner for numerous life insurance companies. He was also a Mason.

Dr. Bardwell literally died "in harness," as he was at work early in the morning on April 7, the day he went to the hospital. It is readily understood by those who knew him how lavishly he expended his energies in his profession, traveling all day and often into the night, visiting the ill who not only called him their doctor but, more often, their friend. Dr. Bardwell's personality was a large factor in his success in the sick room, relieving the strain and anxiety and promoting conditions for the recovery of the patient beyond anything which drugs could produce. The loss of Dr. Bardwell is a personal loss to very many people in the county. He is survived by his wife, Harriet Little, and his son Judson.

THE TRUTH ABOUT MEDICINES

NEW AND NONOFFICIAL REMEDIES

Since publication of New and Nonofficial Remedies, 1918, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Dichloramine-T (Monsanto).—A brand of dichloramine-T complying with the standards of New and Nonofficial Remedies. For a description of the actions, uses, dosage and chemical and physical properties see New and Nonofficial Remedies, 1918, p. 157. Monsanto Chemical Works, St. Louis (*Jour. A. M. A.*, April 6, 1918, p. 999).

Normal Horse Serum.—Marketed in syringes each containing 10 Cc.; also in ampules containing from 10 to 100 Cc. as ordered. Gilliland Laboratories, Ambler, Pa.

Gilliland's Concentrated and Refined Diphtheria Antitoxin.—Marketed in syringes containing each 1,000, 3,000, 5,000, 7,500, 10,000, 15,000 and 20,000 units. Gilliland Laboratories, Ambler, Pa.

Gilliland's Concentrated and Refined Tetanus Antitoxin.—Marketed in syringes containing each 1,500, 3,000 and 5,000 units. Gilliland Laboratories, Ambler, Pa. (*Jour. A. M. A.*, April 20, 1918, p. 1159).

Typhoid Vaccine.—Marketed in packages containing three syringes, the first containing 500 million killed typhoid bacilli and the second and third containing each 1,000 million killed typhoid bacilli; in packages containing three ampules, the first contain-500 million killed typhoid bacilli, and the second and third containing each 1,000 million killed typhoid bacilli; also in ampules containing from 5 to 100 Cc. of the vaccine as ordered. Gilliland Laboratories, Ambler, Pa.

Smallpox Vaccine.—Marketed in sealed capillary tubes, in packages containing one, five and ten tubes each. Gilliland Laboratories, Ambler, Pa.

Original Tuberculin, "O. T."—Marketed in 1 Cc. vials. Gilliland Laboratories, Ambler, Pa.

Tuberculin Ointment in Capsules (for the Moro Percutaneous Diagnostic Test).—An ointment consisting of tuberculin "Old" and anhydrous wool fat, equal parts. Marketed in capsules sufficient for one test. Gilliland Laboratories, Ambler, Pa.

Bouillon Filtrate Tuberculin, "B. F."—Marketed in 1 Cc. and 3 Cc. vials. Gilliland Laboratories, Ambler, Pa.

Bacillen Emulsion Tuberculin, "B. E."—Marketed in 1 Cc. and 3 Cc. vials. Gilliland Laboratories, Ambler, Pa.

Tuberculin Residue, "T. R."—Marketed in 1 Cc. and 3 Cc. vials. Gilliland Laboratories, Ambler, Pa.

Tuberculin for the Detre Differential Diagnostic Test.—Consisting of one tube each of Original Tuberculin "O. T.," Bouillon Filtrate Tuberculin "B. F.," human, and Bouillon Filtrate Tuberculin "B. F.," bovine. Gilliland Laboratories, Ambler, Pa.

Cresol-Merck.—A brand of cresol, U. S. P. Merck and Co., New York.

Guaiacol Carbonate-Merck.—A brand of guaiacol carbonate, U. S. P. Merck and Co., New York.

Quinine Dihydrochloride-Merck.—A brand of quinine dihydrochloride, U. S. P. Merck and Co., New York.

Quinine and Urea Hydrochloride-Merck. — A brand of quinine and urea hydrochloride, U. S. P. Merck and Co., New York.

Thymol Iodide-Merck.—A brand of thymol iodide, U. S. P. Merck and Co., New York (*Jour. A. M. A.*, April 27, 1918, p. 1225).

PROPAGANDA FOR REFORM

Some Nostrums.—Continuing its policy of giving the public the facts in regard to worthless, injurious or misleadingly advertised nostrums, the Louisiana State Board of Health has analyzed the following "patent medicines": Dermillo, a skin and complexion nostrum composed of zinc oxid, calcium carbonate, starch and salicylic acid in water, colored and perfumed.——Wendell's Ambition Pills, a "great nerve tonic," containing strychnin, ferric oxid, pepper, cinnamon and ginger, and probably a little aloes.——Orchard White, a toilet preparation to be mixed with lemon juice, reported to be a mucilage containing bismuth citrate, boric acid, alcohol and gum tragacanth.——Exelento Quinine Pomade, a hair preparation found to consist chiefly of petrolatum, some liquid petrolatum, a trace of oil of gaultheria, sulphur, and among other things, a trace of quinin.——Sloan's Liniment, which appeared to be composed essentially of oil of turpentine, oil of camphor, oil of sassafras and capsicum.——Vick's Vap-O-Rub, which appeared to be a mixture of petrolatum with camphor, menthol and oil of thyme, eucalyptus and turpentine.——La Creole Hair Dressing, a perfumed solution containing lead acetate, sulphur and glycerin, alcohol and water. ——Prescription A 2851 for Rheumatism, formerly said to have been known as Eimer and Amend's Rheumatic Remedy, which appeared to be a sherry wine containing 7.5 per cent. potassium iodid (*Jour. A. M. A.,* April 6, 1918, p. 1024).

Guaiodine.—Examination of Guaiodine, a preparation of the Intravenous Products Co., Denver, in the A. M. A. Chemical Laboratory shows that, instead of containing free "colloidal" iodin as claimed, the preparation is essentially an iodated fatty oil, containing only combined iodin. The referee of the Committee on Pharmacology reported to the Council on Pharmacy and Chemistry that equally misleading, in view of the Laboratory's findings, are the implied claims that the antiseptic action of Guaiodine corresponds to that of free iodin. Guaiodine is advertised chiefly for the treatment of gonorrhea by means of obviously false claims. The Council declared Guaiodine inadmissible to New and Nonofficial Remedies because of false statements as to composition and action (*Jour. A. M. A.,* April 6, 1918, p. 1026).

Neoarsphenamine. — The Federal Trade Commission has granted an importing license to the Diarsenol Company, Inc., 475 Ellicott Square, Buffalo, for neodiarsenol, the Canadian brand of neoarsphenamine. Licenses to manufacture neoarsphenamine have also been issued to the Takamine Laboratories, New York, to the Farbwerke-Hoechst Co., New York, and to the Dermatological Research Laboratories, Philadelphia. The safest and most effective products, provided one has mastered the technique, are the arsphenamines—not the neoarsphenamines (*Jour. A. M. A.,* April 6, 1918, p. 1027).

American-Made Acetylsalicylic Acid.—At the request of the Council on Pharmacy and Chemistry an examination of the market supply of American-Made acetylsalicylic acid has been made in the A. M. A. Chemical Laboratory by P. N. Leech. The investigation shows that there are on the American market, made by American firms, several brands of acetylsalicylic acid that are just as good as, if not better than, the widely advertised Aspirin-Bayer. About a year ago the Council on Pharmacy and Chemistry deleted Aspirin-Bayer from New and Nonofficial Remedies. Since the Bayer aspirin patent expired in February, 1917, thereby making it possible for manufacturers legally to produce and sell acetylsalicylic acid in the United States, the Council established standards for the quality of this unofficial drug. As a result, the following products have been found to meet these requirements and are included in New and Nonofficial Remedies: Aspirin-L. and F., Acetylsalicylic Acid-Squibb, Acetylsalicylic Acid-Merck, Acetylsalicylic Acid-Milliken, Acetylsalicylic Acid-M. C. W., Acetylsalicylic Acid-Monsanto and Acetylsalicylic Acid-P W. R. (*Jour. A. M. A.,* April 13, 1918, p. 1097).

Unduly Toxic Arsphenamin.—In view of the reports in current medical literature of untoward results from the use of arsphenamin and neoarsphenamin, Dr. G. W. McCoy, Director of the U. S. Hygienic Laboratory, Washington, D. C., requests that samples of any lot of these arsenicals which have shown undue toxicity be forwarded to the Hygienic Laboratory for examination (*Jour. A. M. A.,* April 13, 1918, p 1110).

Hall's Catarrh Cure.—Another victim fails to get the hundred dollars offered in cases in which this preparation failed to effect a cure. The promoters informed its victim that before paying the guarantee, he would have to prove that his case was one of simple catarrh not complicated by any other disease and that he had taken sufficient of the cure (*Jour. A. M. A.,* April 13, 1918, p. 1113).

Antipneumococcus Vaccine.—The work by Lister in the diamond mines of Kimberley, South Africa, gives promise of a successful method of inoculation against lobar pneumonia. Lister finds that the pneumonia prevalent among the workers in the diamond mines is due mainly to three groups of pneumococci, and that inoculation with a vaccine made from the three groups prevents the occurrence of pneumonia as caused by members of these groups (*Jour. A. M. A.,* April 20, 1918, p. 1163).

Misbranded Nostrums. — The following are some "patent medicines" which the federal authorities held to be sold under false claims: Ascatco, containing 13 per cent. alcohol and some opium.——Mexican Oil, containing over 57 per cent. alcohol, together with essential oils, glycerin, red pepper, emodin, menthol and a small amount of opium alkaloids.——Persil, containing 40 per cent. alcohol. Though claimed to contain, in addition, asparagus, parsley, celery, buchu, and juniper berries, it contained no appreciable quantities of celery, buchu, juniper, asparagus or parsley. ——Dr. Kennedy's Favorite Remedy, containing 18 per cent. alcohol, nearly 50 per cent. sugar, and over 4 per cent. potasium acetate, with methyl salicylate, aloes, licorice and oil of sassafras.——Our Standard Remedy, tablets containing rhubarb, senna, scoparius, licorice, red pepper and some ammonia compound with indications of aloes.——Dr. King's Throat and Lung Balsam, claimed to relieve coughs and colds and consumptive patients in the last stages of the disease. —— "White Pine Expectorant" and "White Pine Balsam" (Allan-Pfeiffer Chemical Co.), a syrup containing alkaloid (probably morphin), chloroform, alcohol, benzoic acid and plant extract, but no extract or tar of white pine.——California Tuna Tonic Tablets, pills containing iron carbonate and a small quantity of nux vomica alkaloids (strychnin, etc.).——Alorine Antiseptic Suppository, containing quinin sulphate, boric acid and tannic acid.——St. Joseph's Quick Relief, containing 32 per cent. alcohol with Peru balsam; camphor and red pepper.—— "Andrews' Wine of Life Root or Female Regulator," containing over 14 per cent. alcohol, sugar, methyl salicylate and tannin. "Andrews' Wine of Life Root Annex Powders," composed of sodium chloride and sodium bicarbonate, with a small amount of sodium carbonate.——Clark Stanley's Snake Oil Liniment, a light mineral oil mixed with about 1 per cent. of fatty oil, red pepper and possibly a trace of camphor and turpentine (*Jour. A. M. A.,* April 20, 1918, p. 1183).

Neurosine and the Original Package Evil.—Neurosine advertisements ask that only original bottles of Neurosine be dispensed when physicians prescribe the nostrum. The reason is obvious: the bottle has the name blown in the glass and thus is an invitation to the patient to purchase more on his own initiative and also to recommend the preparation to his friends. The danger to the public from the self-administration of mixtures of bromides, such as Neurosine, is obvious. Neurosine is said to contain potassium bromid, sodium bromid, ammonium bromid, zinc bromid, extract of lupulin, fluidextract cascara sagrada, extract of henbane, extract of belladonna, extract of cannabis indica, oil of bitter almond and aromatic elixir. This chemical blunderbuss has been advertised for use in insomnia, hysteria, neuresthenia, migraine, etc. It has also been recommended for children suffering from chorea. In all the years that Neurosine has been exploited to physicians with such remarkable claims, we have never seen a report of a careful clinical study in which the product has been used under the conditions which scientific investigation demands (*Jour. A. M. A.*, April 27, 1918, p. 1251).

The Toxicity of Arsphenamin (Salvarsan).—James C. Sargent, Milwaukee, Wis., and J. D. Willis, Roanoke, Va., report untoward effects from the intravenous administration of American-made salvarsan (arsphenamin). Such experiences are not unusual, but should be reported. Untoward results followed the use of the German salvarsan. Such reactions may be due to faulty preparation, to deterioration of certain ampules of a batch, to idiosyncrasy of the patient or to faulty technic or preparation or injection. There is no reason to believe that the arsphenamin made in this country is more toxic or less satisfactory than that formerly imported from abroad (*Jour. A. M. A.*, April 27, 1918, p. 1254).

CAMPETRODIN AND CAMPETRODIN NO. 2

Report of the Council on Pharmacy and Chemistry

The following report on Campetrodin and Campetrodin No. 2 has been adopted by the Council and its publication authorized.

W. A. Puckner, Secretary.

The following report of the A. M. A. Chemical Laboratory on "Campetrodin" and "Campetrodin No. 2," sold by the A. H. Robins Company, Richmond, Va., was submitted to the Council by a refree of the Committee on Pharmacology:

Campetrodin and Campetrodin No. 2, Double Strength, are called "ethical medicinal specialties" by the A. H. Robins Company, Richmond, Va., which sells them. An advertisement in the *Maryland Medical Journal* (December, 1917) contains the following claim for composition:

> "Campetrodin (Made in Two Strengths of Iodine). This preparation is an Oleaginous Solution of Iodine in Camphor."

A booklet describing the "specialties" of the Robins Company contains the following in reference to Campetrodin: "Composition: Camphor, Iodine Element, Oleaginous Solvent." From this it appears that the preparations are claimed to contain elementary (free) iodin in an "oleaginous solvent." Since free iodin, as is well known, readily combines with fats, it was decided to determine the form in which the iodin was present in these preparations. The examination demonstrated that both preparations contained but a trace of free iodin. On steam distillation there was obtained from both preparations a distillate amounting to about 35 per cent. by volume which had an odor strongly suggestive of turpentine, while the residue contained the iodin and had the characteristics of an iodized fatty oil.

Quantitative determinations indicated that Campetrodin contained approximately 0.03 per cent. of free iodin and 1.3 per cent. of iodin in combination with the fatty oil. Campetrodin No. 2, Double Strength, contained approximately 0.03 per cent. free iodin and 2 per cent. of iodin in combination with the fatty oil.

Thus, contrary to the published statements, Campetrodin is *not* a preparation of free (elementary) iodin and Campetrodin No. 2, Double Strenth, does *not* contain twice as much iodin as Campetrodin.

The report of the Chemical Laboratory shows that the statements made in regard to the composition of Campetrodin and Campetrodin No. 2 are incomplete in some respects and false in others. In view of the Laboratory's findings it appears superfluous to inquire into the therapeutic claims made for the preparations. It is evident, however, that a solution containing practically no free iodin is not, as claimed by the Robins Company, "adapted for use wherever . . . iodin is indicated externally. . . ."

It is recommended that Campetrodin and Campetrodin No. 2 be declared inadmissible to New and Nonofficial Remedies because of false statements as to chemical composition and therapeutic action, constituting conflicts with Rules 1 and 6.

The Council adopted the recommendation of the referee and authorized publication of this report.

WILL IT WAKE US UP?

It is not necessary to emphasize how immeasurably much is at stake these spring days along the furiously embattled line in France. American troops may or may not be engaged. But American fortunes are. It is the United States, at least as much as any nation, that stands to lose tremendously and tragically if the Allied front is eventually pierced. We shall then have very much more hard fighting to do to "make the world safe for democracy"—for this democracy of ours—than we would have had if the Allied front had stood. In that case, it becomes more imperative than ever that we widen the conduit that carries our fighting men, our munitions and our food supplies to Europe. Shipbuilding leaps into the position of an actual and immediate life-saving operation—the life-saving of a nation.

It is to be feared that the American people have not yet taken seriously enough the desperately dangerous road they entered when they entered the war. As we have said before, "It is no joke to go to war with Germany." It looks less like a joke now than ever. But we have gone to war with Germany; and we must win that war or lose our hitherto carefree and untrammeled national independence. We have no option, no thought, save to go on. But that means deadly earnest endeavor and deep-cutting sacrifice. We are toying with such easy duties as wheat conservation and labor organization. But to toy with these simple forms of service will impose on us in the near future the far heavier sacrifices of the whole industrial life of the nation, its financial freedom, its commercial system and—almost too sacred to be mentioned in the same breath—countless lives of our very best who might otherwise have been spared.

Let the whole American people turn its back on selfish indulgence and easy shirking of obligation and take hold of this war with both hands and a single mind before German victories in the field brand upon our best intentions that terrible, two-worded, soul-sickening epitaph of Lloyd George as applied to the earlier efforts of his own country—"Too late!"—*Public Ledger,* March 27.

AMERICAN AND GERMAN EFFICIENCY

The searchlight of war has brought out many interesting facts, and one of these is that the vaunted German efficiency will not always stand the test of comparison with American efficiency.

The Germans boasted of being the greatest farmers on earth. Investigation shows that in efficiency in agriculture, measured by the produce per acre, America being graded 100, Belgium leads the world, at 205; Great Britain comes second, at 164; and Germany third, at 155; America comes fourth.

But the better test is the man test rather than the acre test, and here America leads the world by over 2 to 1. Again, grading America at 100 per farm worker, Great Britain produces 43 and Germany 41. The American farmer cultivates 27 acres, the German farmer but 7. With the aid of vast quantities of fertilizer the German produces more per acre, but he produces at a much greater cost per bushel and he produces much less than half as much per man

THE PENNSYLVANIA MEDICAL JOURNAL
Official Organ of the Medical Society of the State of Pennsylvania
Volume XXI
Number 9
Athens, Pa., June, 1918
Subscription: $2.00 Per Year

ORIGINAL ARTICLES

THE TREATMENT OF FRACTURES OF THE NECK OF THE FEMUR WITH SPECIAL REFERENCE TO WHITMAN'S ABDUCTION TREATMENT *

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The points I desire to emphasize are: (1) There should be a more accurate nomenclature in stating where the fracture is situated in the neck, as the treatment and results vary to a certain degree with the location; (2) the high mortality (much higher than is frequently stated) and the causes thereof; (3) great amount of morbidity (pain and inability to work); (4) advantages of Royal Whitman's abduction method associated with the internal rotation of Hawley; (5) cases where Whitman's method cannot be applied; (6) results of Whitman's method; (7) disadvantages and mechanical defects of extension methods.

Fracture of the neck of the femur usually occurs in one of two positions but may occur in a third. (*a*) One at the junction of the head with the neck. (*b*) The junction of the neck to the trochanter. (*c*) Midway between the head and the trochanter. *a* and possibly *c* are intracapsular fractures and are more liable therefore to result in nonunion. Many causes have been ascribed for this nonunion, but three are most common. (1) The head rotates in one position and the neck in another, so that the fractured surfaces do not become approximated. (2) Lack of blood supply in the head. (3) The interposition of the synovial membrane or the action of the synovial fluid. Fractures at the junction of the neck with the trochanter frequently unite without any treatment, thus giving false statistics when one is considering the entire number of fractures of the neck. When one considers a group of these fractures alone one obtains much better results than when the other two groups are included, i. e., with the ordinary method of treatment. In a careful study of the roentgen-ray plates of these cases and particularly stereoscopic plates, one will note the exact position of the fragments. Each variety of fracture of the neck has a different rotation of the inner fragments. Besides the upward pull of the outer fragment, there is a decided outward rotation. This of course is well emphasized in the position of the foot. It will also be noted that the head of the bone, particularly in those cases where the fracture is at the junction of the neck with the head, that the head is rotated upwards so that at best with the ordinary traction methods, one would obtain coxa vara. The cause of this upward rotation of the head is apparently due to the upward pull of the outer fragment on the under surface of the capsular ligament.

The high mortality associated with these fractures is of course often partially due to the age of the patient which in itself has caused structural changes, so that fractures are liable to occur with slight trauma. To discover that this mortality is high one has only to consult the mortuary statistics of any city, as these give a better idea than the hospital records, because in elderly people where the injuries are considered more or less fatal by the family, the patients are not removed to hospitals.

Great Amount of Morbidity.—That these patients suffer intense pain is evident to anyone watching a single case. Even the rotation of the leg is painful besides the movements necessary for the use of the bedpan, etc. This pain causing continuous loss of sleep partially accounts for the lack of progress in these cases. Frequently, even with the best of care hypostatic pneumonia and bedsores develop from trophic and postural causes. In old cases of nonunion, frequently there is suffering when any motion is attempted. The cause of this pain is evident when one dissects the structures around this fracture. You will note the close proximity of the sciatic and obturator nerves and the pull upon these nerves that would occur with any motion of the leg. I wish here to cite a case where the sciatic nerve was found at amputation to be resting upon the anterior surface of the neck. In looking up a series of cases of ununited fracture and in cases seen in consultation, it is a curious fact that usually no apparatus has been ordered. The Thomas hip brace is the one in general use. I have, however, found that a long hip brace with a strong and broad abdominal band with perineal straps is the most satisfactory apparatus. It should be so constructed that the knee may be flexed or remain stiff as desired and the shoe should be separated by a mechanical device from the rest of the brace, as this will greatly increase the ease of application.

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* Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

Inability to Work.—These patients when the best results are obtained are usually unable to work for approximately one year and in most cases it is advisable that they should never be permitted to return to hard labor.

Method of Application of Whitman's Cast.—The leg when seen is usually in external rotation with three-fourths to one and one-half inches shortening. The patient is etherized, placed upon a frame with a perineal bar, the thigh is then flexed upon the abdomen, adducted and extension applied. The thigh and leg are then abducted until the trochanter strikes the ilium above the acetabulum. It is then rotated inward and held in this position and a reenforced cast applied from just below the axilla to the tip of the injured foot, the other leg and thigh not being included in the cast. We find that a pinch of cement applied to the plaster of Paris from which the bandages are freshly rolled not only increases the tensile strength but the rapidity with which the cast hardens. By these manipulations the fragments if they be locked are first unlocked by the adduction and then by the abduction with the trochanter against the acetabulum. The inward rotation so pulls the capsular ligament that the fragments are in approximate alignment. By that I mean the obtuse angle which occurs in the normal femur. If the ideal is not quite obtained, at least they will unite at a right angle and the fractured ends will be in apposition. It is essential to have a roentgenogram after the application of the cast to be sure the fragments are in apposition.

The advantages of the method are: The fragments are placed in as near normal position and alignment as possible and held there in the cast, which not only mobilizes the fragments but the joints above and below. This allows the patient to be rotated and turned in any position without pain. He can rest easily on the abdomen or on the back. Even where bedsores are present they rapidly heal. The patient can be placed out of bed in a wheel chair the day after the application of the cast. On account of the absence of pain and their ability to sleep the patients gradually improve; so much so that, in cases where a few days before you had hesitated to give ether and had considered them hopeless, they are happy, contented and fairly comfortable instead of morose and fault finding as before the application of the cast.

There are certain cases in which Whitman's method should not be employed, i. e., cases of incontinence of urine or feces or where large herniæ are present. In these cases, the abduction frame of Jones is advisable but this has never proved satisfactory in my hands as practically all of my patients have died from inanition and pressure ulcers. It is only just to state that these cases were unsuitable for Whitman's method and necessarily were the most unfavorable cases for any method of treatment. It is better in this type of case to allow the patient out of bed in a wheel chair with enough opium to relieve the pain. Just how long after the fracture it is possible to obtain results with Whitman's methods I am unable to state, as practically all of my cases were acute, ten weeks being the longest time elapsing between the time of the fracture and my visit.

The Disadvantages of the Extension Methods.—Patients are practically never etherized and the fracture properly set. Even if this were accomplished, the results thus obtained would be destroyed the first time it was found necessary to place the patient upon the bedpan, etc. As Whitman has proved, the fragments are not approximated in the correct line if approximated at all. If, however, there is impaction, frequently very satisfactory results can be obtained by placing these patients in a plaster cast. Cotton goes so far as to attempt to make them all impacted by striking the femur with a mallet. I have not found this necessary although undoubtedly there are cases where this could be used to advantage. Whitman advises the breaking up of all impacted fractures; others do not believe in disturbing them at all. I have taken the middle course, i. e., if the impaction occurs so that there is no marked eversion, I do not disturb them but immediately apply a cast. If the impaction occurs with the leg markedly everted, I break it up and reset it in Whitman's abducted position. The Hodgen method with overhead suspension in 45 degrees abduction position is frequently satisfactory but the nursing problem is not corrected nor is the joint mobilized and the patient is bedridden instead of being up in a wheel chair.

Many of the nonunions, I think, would be avoided if the Whitman's method with internal rotation were in more general use and I am sure a great amount of suffering could be relieved.

The weight or age of the patient does not in any way prevent its application. I have used it in patients weighing up to 330 pounds.

As stated in the early part of the paper, for ununited fractures we use a modified hip brace which has been exceedingly satisfactory. Patients have been relieved of pain and locomotion has been so improved that they are able to walk with the aid of a cane where previously they had to use a crutch.

Since using this method, I have not found it necessary to nail or peg in any of the cases, and from published results, personal communications and in visiting clinics, I have not been sufficiently impressed with the results to justify operative procedure in the acute cases.

Case 1.—Left fracture of neck at junction of trochanter with neck, with one-fourth inch shortening. Controlled by roentgen ray. Patient complained of great pain. Whitman's cast was applied and patient was out of bed the following day in wheel chair. On account of incontinence of feces and urine, cast was soiled and it was found necessary to remove it. Pain recurred. Patient gradually became worse and died seven days after accident.

Case 2.—M. D., weight 312 pounds. Admitted with eversion and inability to move right thigh. Roentgen ray showed fracture of middle of neck, 1 inch shortening. Pain was so excruciating that it was found necessary to give large amounts of morphin. Patient did not sleep for two nights. Under ether anesthesia, fracture was reduced and set by Whitman's method. No opium was necessary from this date. Patient left hospital four weeks later with cast still on; it was removed eleven weeks afterwards. Roentgen ray showed partial union. Patient was in bed fourteen weeks from onset, then up in wheel chair, gradually using crutch. Eighteen months later, patient was going up and down stairs with aid of cane and states this was simply a precaution and not a necessity. Roentgen ray shows slight coxa vara. There was ability to rotate foot inward and outward. No shortening was noticed.

Case 3.—S. S. Left intracapsular fracture with absorption of neck and partially upward dislocation of shaft. Duration, one year and five months. Leg and hip brace with perineal bands gave almost complete relief from pain. Patient was able to discontinue use of crutch and now uses cane only.

Case 4.—A. A. Admitted with intracapsular fracture with eversion of right leg and thigh; 3 cm. shortening in Bryant's triangle; 3 cm. shortening in entire length of leg and thigh. Roentgen ray showed fracture at junction of the neck with the head. Patient had intense pain and incontinence of urine and feces. Cast applied the following day but the patient never rallied, dying on account of extreme inanition.

Case 5.—B. F. Intracapsular fracture at junction of head with the neck, with one-half inch shortening. Patient had very little pain. Roentgen ray showed fragments not approximated. She refused treatment and left hospital six days after admission. Was treated at home with Buck's extension by her physician. When seen eleven months later she had an ununited fracture, suffers great pain and is bedridden.

Case 6.—C. N., aged 75 years. Fracture of right femur, 1¾ inches shortening. Patient had suffered excruciating pain, refused to eat and could not sleep. Cast was applied second day after admission after reduction by the Whitman method. After returning to room patient stated pain was relieved. He was up in wheel chair the following day. When last seen, five months after the accident, he was walking without any support; motion was good.

Case 7.—M. M. Fracture of right neck at the junction of the middle third, with 2½ inches shortening. There were excruciating pain on attempting any movement, inability to sleep, marked arteriosclerosis and myocarditis, general senility, incontinence of urine and feces. Patient refused cast and was treated with extension. Abscess of calf developed and pain was unrelieved. Jones' abduction frame was applied, but patient refused to use same and died 3½ months later.

Case 8.—A. F. Admitted with left intracapsular fracture at junction of head and neck, with 2 inches shortening. Controlled by roentgen ray. There was extreme pain. Patient was irritable and dissatisfied. Three days after admission under ether anesthesia fracture was reduced by Whitman's method and cast applied. There was extreme abduction with internal rotation. Roentgen ray showed fragments in apposition and slight coxa vara. Eight weeks later patient was still wearing cast. Three weeks after this, eleven weeks from time of accident, cast was removed and union was found to be present. After seven to ten days of massage and passive motion patient could move leg in all directions, and fourteen weeks after accident was up and using crutches, with no noticeable shortening.

Case 9.—R. M. C. Intracapsular fracture. Patient refused Whitman's treatment and was treated with Buck's extension, sand bags, and external splint. After fourteen weeks there was no union. Patient refused to have roentgen ray taken; was under my care only four days. Last time patient was heard from there was no union.

Case 10.—W. C., aged 81 years. Intracapsular fracture. Patient was moribund and suffered excruciating pain. There was incontinence of feces and urine, which the patient stated had never occurred before, and there was no treatment on account of this. Patient was placed in wheel chair, but died three days later.

Case 11.—S. C., aged 72 years. Admitted fourteen weeks after accident. Patient said she had been in cast which was straight with body; in other words, there was no abduction. She refused to have cast applied or purchase brace. Roentgen ray showed fracture at junction of head with neck. Patient was transferred to medical service where she was treated for cardiorenal disease. No union resulted and there was continuous pain in right hip. She died two months later.

Case 12.—A. B. Fracture of left thigh with impaction. There was no eversion; three-fourths inch shortening. Roentgen ray showed fragments to be impacted. Patient was placed in bed with sand bags and firm adhesive spica. He was allowed to leave four weeks after admission, and the last heard of was walking. Could trace him no further.

Case 13.—H. G. Old intracapsular fracture of ten years' duration with sloughing trophic ulcers of leg and thigh. Patient suffered excruciating pain, requiring several grains of opium daily. Amputation showed sciatic nerve to be dislocated anterior to the fragment. Complete relief was had after amputation.

Case 14.—M. M. Intracapsular fracture at juncture of neck with head. There was extreme pain. Patient was seen by me three days after accident and on account of inanition and inability to eat, doctor thought death would be the outcome. Under ether anesthesia, the fracture was set and a cast applied. Patient was out of bed next day in a wheel chair, and is now eating. He is very cheerful and apparently without pain, four weeks having elapsed from time of accident.

Case 15.—H. M., aged 78 years. Intracapsular fracture at junction of neck with shaft. Patient suffered excruciating pain and there was incontinence of feces and urine. No treatment was given. The patient died three days later.

Case 16.—A. A., aged 64 years. Intracapsular fracture at neck and head. Controlled by roentgen ray. There was a slight amount of pain, and 1½ inches shortening. Under ether anesthesia, cast was applied. Three weeks have elapsed and the patient is eating normally and an abrasion which had developed on her back has entirely healed.

Case 17.—Mrs. C. Intracapsular fracture of neck with trochanter. Controlled by roentgen ray. There was one-fourth inch shortening. Patient refused cast and extension method was used. Treatment was continued at home by local doctor. Three months later there was no union; thigh brace was applied and patient was able to be up with use of cane.

Case 18.—M. C., aged 75 years. Intracapsular fracture at junction of head with neck, with 1¼ inches shortening. Patient complained of excruciating pain. Reduction was made by Whitman's method, and part placed in cast. Plaster did not set properly and abduction was greatly diminished. Cast was removed in eight weeks at request of patient who stated she thought this was long enough. She refused to stay in bed, and left hospital without permission. When seen fifteen months later, patient had ununited fracture with partial absorption of neck, was able to move leg in all directions, and walked with a cane. She has excruciating pain, particularly at night, but refuses to wear brace, and now desires operative procedure. Result: Failure in a Whitman's, partially due to poor application of method.

Case 19.—K. F., aged 67 years. Intracapsular fracture at junction of neck with head, which was confirmed by roentgen ray. There was 1 inch shortening. Reduction was made by Whitman's cast method, cast being retained for eleven weeks, and then cut and for two weeks reapplied daily after massage. Two and one-half years have elapsed and patient is now up and walking. There is no shortening, although patient has a slight limp. She is able to go up and down stairs with ease, and has no pain except in rainy weather. Report comes from her doctor that results are entirely satisfactory.

Case 20.—H. C. Intracapsular fracture of left leg at junction of neck with trochanter, with 1¼ inches shortening. Treated by Whitman's method and cast. Results were satisfactory. One year later right leg was fractured at junction of neck with trochanter. Treated by extension. Union occurred but leg is shorter than left. There is some limp. Roentgen ray showed the one treated with Whitman's not quite a normal angle, while the one treated with extension showed a marked degree of shortening, less than a right angle, with junction of neck and trochanter.

CONCLUSIONS

From a study of a series of twenty-three cases of which I have records and knowing full well there are many others both of ununited and acute cases where the records are not complete, and in some cases where no records were kept, I wish to present the following:

	CASES
Amputation for old ununited fracture	1
No treatment or treatment with extension, either because of physical conditions or where treatment was refused	8
Impacted	1
Whitman's cast applied where it should not have been—patient moribund—patient incontinent	2
Whitman's cast applied	11

Of the ununited cases, of which there were three, including one failure from Whitman's method, it was found more or less satisfactory to give no treatment beyond a brace, as the cases were not applicable for operation. Of eleven Whitman's, we have one failure and in this case it will be noted that the cast was not satisfactory and the leg was not completely abducted. However, this might have occurred if the cast had been satisfactory.

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DISCUSSION

Dr. William P. Walker, South Bethlehem: Dr. Dorrance has certainly called our attention to a most important division of fractures of the femur. At St. Luke's Hospital, South Bethlehem, we have had in the last two years fifty-three fractures of the femur and of this number twelve, or 22 per cent., have been fractures of the neck. We have not heretofore attempted to divide these into separate classes, according to the portion of the neck involved, but I believe the first point the doctor emphasizes, viz., that there should be a more accurate nomenclature stating where the fracture in the neck is situated, is a very good one.

If we are to draw conclusions as to the value of different methods in giving bony union, functional results and anatomical restoration we ought certainly to know whether a given series includes fractures of all the three usual sites, or whether we are studying fractures at the junction of the head and neck, the base of the neck, or those between these two. For instance anyone would expect bony union in the majority of fractures through the base of the neck, which are generally impacted, no matter what method of treatment is used, and not expect nearly so large a percentage of union in cases broken just below the head; so as I have said it seems to me the first point is very well taken.

The paper mentions three causes as bearing most on nonunion; viz., (1) lack of approximation; (2) deficient blood supply to the head; (3) interposition of synovial membrane or action of the synovial fluid. I think the second cause mentioned is the major one.

As regards mortality rate, I do not quite agree with the writer as to the unreliability of hospital records in this class of injuries. In our community, at least, I feel sure that fully as large a proportion of fractures of the neck reach the hospital as the proportion of other fractures of the femur. The nursing of such cases is so difficult and exacting that the family is quickly brought to the point of seeking institutional care. I quite agree with the statement that the mortality is high. Out of our twelve cases of fractures of the neck, three, or 25 per cent., died; of the forty-one cases in other portions of the femur two died, or 4.9 per cent. One of these was a compound fracture with bad infection, and the patient died of sepsis; the other died in delirium tremens after a plating operation.

I can testify to the accuracy of the next point made by Dr. Dorrance: the great suffering endured by these patients. It certainly arouses all one's sympathies to see an aged man, or woman, who in most cases has had the usual sorrows and sufferings that go with most long lives, when so near the journey's end, called on to put up with this. Any means of treatment which markedly alleviates the pain should be hailed with joy by the surgeon, and most observers agree that immobilization of the joint with ability to leave the bed does certainly relieve in most cases.

I wish to add my agreement with the statement that a long hip brace with perineal straps is a most efficient ambulatory apparatus, as is also the Thomas splint. As regards the use of the Whitman method in breaking up impactions, I feel that in young or vigorous adults I should recommend it, as does Dr. Dorrance; in old subjects, however, where there is impaction I believe I should hesitate to disturb it, even though there was considerable eversion. Here I differ from the paper. The Hodgen splint we frequently use at St. Luke's and find it very satisfactory. I suppose 50 per cent. of our cases of fracture of the neck we treat with that splint, in a position of abduction. We do not have any special difficulty in the use of the bedpan. We practically never do an open operation for a recent, simple fracture of the neck; this also agrees with the practice of Dr. Dorrance.

Dr. P. G. Skillern, Jr., Philadelphia: I believe Whitman's abduction as employed by Dr. Dorrance is the best of the conservative methods of treating fracture of the neck of the femur. If I myself had a hip fracture I would want someone to put an Albee bonegraft peg in my hip. I should not want to wear a plaster-of-paris splint for two or three months for fracture of the neck and run a chance of not finding union when the splint is removed. Why does not a fracture of the neck of the femur in the synovial portion heal? Because the capital, or head fragment is scantily nourished and laved with synovial fluid, which delays callus formation. With the Albee peg we are going to get healing from the good part of the bone, the great trochanter. We are going to conduct osteogenetic elements from the rich cancellated bone of the great trochanter into the impoverished head by means of the bonegraft peg. Dr. Albee once told me that no less an authority than Dr. Scudder of Boston told him that he believed this bonepeg method to be the best for fracture of the neck of the femur, whether occurring in an aged patient or in a young one.

Dr. M. Behrend, Philadelphia: I would like to ask Dr. Dorrance, when he puts one leg in abduction what he does with the other leg. It is a well-known fact when one leg is abducted the other leg feels uncomfortable. I have used the Travail splints recommended by Murphy and the patients are very much more comfortable when both legs are abducted. What has been Dr. Dorrance's experience with this method? How long does he keep his brace on and does he let these patients go around for a lifetime with an ununited fracture, or are these fractures finally nailed or pegged? It has been my custom to wait six months or a year before this operation is done. I do not believe in operating on these old folks for the acute condition.

Dr. Dorrance, closing: In regard to Dr. Walker's patients not coming back, I found a large percentage of them did not come into the hospital. Whitman has an orthopedic clinic and I waited a long time before an adult patient came. I saw him set one of these fractures and also one that had been set in New York. He flexes, adducts and abducts, then makes extension and then outward rotation. Then he makes further outward rotation when he adducts. Hawley particularly brought out that point. There has been this outward rotation; so he flexes, abducts, extends and adducts, then inward rotation.

I do not peg in these cases; there have been many failures. They are old people, 75 or 76, and do not stand operative procedure. The mortality is higher than you think. If we get a correctly fitting brace, a large percentage of the patients are very comfortable. They will say, "Give me the brace," if we put the facts before them, and it is only fair they should know the facts. I think I would take the brace myself if I had an ununited fracture. Why should we put bone chips in some and bone pegs in others? If absolutely good the method would be used by everyone in pegging. The other leg does not have to be put in plaster. I do not get cures in all. Many of the patients refuse this treatment; they want to go home and have extension methods. My results have been satisfactory, but one to eleven failed to obtain union; it is better than anything else besides the lack of pain. A great many men, especially in New York, have the cast only down to the knee. At Bellevue it is done that way, and although they claim they get good results, to me it is not satisfactory; as far as I can see there is swelling and pain in the knee. I have not had results in nailing these fractures because my patients have not wanted to be nailed or pegged.

PNEUMOCOCCIC PERITONITIS *

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In pneumococcic peritonitis we have a local manifestation of a pneumococcal septicemia. Serous membranes seem unusually vulnerable to this type of infection, pleura, peritoneum, meninges and synovial membranes very frequently showing varying degrees of inflammation, usually purulent due to this organism. For example we have had during the past winter three patients, with purulent arthritis of the knee joint due to the pneumococcus.

While clinically pneumococcic peritonitis usually presents the aspect of a primary infection, it is as is the case in meningitis and arthritis a metastatic or secondary infection. The primary focus of blood or lymph stream contamination is of course quite uncertain in a given case, yet through no other medium than the blood or lymph could the peritoneal cavity be so suddenly and completely involved as in this form of peritonitis. It is a diffuse and rapidly spreading peritonitis from the very beginning.

Many possible paths of infection have been suggested, via vagina and fallopian tubes in the female, through the intestinal walls, through the diaphragm from pleura. None of these, however, seem satisfactory.

The relative frequency of this type of peritonitis in young girls would apparently throw suspicion on the genital tract, yet it seems unlikely that such a sudden and overwhelming type of peritonitis would follow a direct and purely local source.

There is apparently no reason to believe that the pneumococcus enters the body in any different manner when it causes a peritonitis, than when it causes the more common pneumonia. The predisposing factors are the same, poor hygiene, overcrowding, etc., both in pneumonia and peritonitis, and many cases will show involvement of lung along with the peritoneum; consequently the upper air passage may still be considered the most likely source of infection.

Pneumococcic peritonitis is rare in adults. Nearly all cases occur in children under 10 years of age; girls much more frequently than boys. In 136 cases of general peritonitis in children, including appendiceal and tuberculous infections, thirty-seven, or about 25 per cent., were due to the pneumococcus. It is usual to describe two types, the circumscribed and the diffuse. The circumscribed is simply a later stage of the diffuse peritonitis, in which the pneumococcus has been defeated and localization has taken place.

As a rule, there are no prodromal symptoms. The patient, usually a child, is suddenly taken ill with abdominal pain, vomiting, high fever and rapid pulse. Diarrhea may appear as one of the initial symptoms, but is frequently delayed for a day or two. It is not present in all cases. The stool presents nothing characteristic. The pain is usually diffuse over the entire abdomen and when localized is nearly always eccentric, not corresponding to the sites of pain found in the more common acute abdominal conditions. The severity of the pain bears an inverse relationship to the degree of toxemia. "Facies abdominalis" appears early. The central nervous system is commonly involved in the severe toxemia, as evidenced by somnambulism, drowsiness, restlessness or delirium.

The leukocyte count is usually increased to 20,000 or 30,000. An increase in the number of leukocytes is not, however, as constant as in acute appendiceal and perforative peritonitis. The physical signs are not clear cut, though the observer is at once impressed with the severity of the illness. He is further impressed on examining the abdomen by the paucity of physical signs to account for such a grave condition.

There will be noted slight rigidity, some tenderness, but with no maximum point, no distention, and the presence during the first twenty-four or thirty-six hours, the period during which the surgeon is most likely to be called, of alarming symptoms suggesting early surgical interference. After several days or a week, distention with signs of peritoneal exudate appear, and the general condition of the patient improves. A subacute or chronic phase of the disease then ensues, with localized collection of pus in abdomen, usually subumbilical, which, if not opened and drained, may spontaneously rupture through the umbilicus or bowel. The emaciation, hectic fever, and the absence of acute inflammatory signs in the abdomen, often leads to a diagnosis of tuberculous peritonitis.

DIAGNOSIS

The diagnosis is difficult. Acute appendicitis with diffuse peritonitis is the mistaken diagnosis most frequently made in the early stages. Abdominal findings in the early stages of a peritonitis, perforative or appendiceal, as a rule

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* Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

overshadow the constitutional symptoms; in pneumococcic peritonitis the reverse is true. In fact, the one striking feature in the latter is the marked contrast between the severe systemic reaction and the meager abdominal signs peculiar to peritonitis.

Abdominal tenderness and muscular rigidity are not well marked and a point of maximum tenderness, so commonly found in perforative and appendiceal peritonitis, is absent. Severe diarrhea, frequently present, is also relatively rare in peritonitis from other causes.

The picture of peritonitis, including pain, is even more poorly revealed in those cases with a very high degree of toxemia and the accompanying apathy when associated with diarrhea may suggest typhoid fever. This diagnosis should be easily eliminated by the leukocytosis, rapid pulse and history of sudden onset. Provided the stormy initial symptoms subside and localization of the peritoneal exudate occurs, the resultant abscess, an empyema of the abdominal cavity, if we may call it such, may on account of its chronic (?) features and tendency to spontaneous rupture, simulate tuberculous peritonitis.

The history, various laboratory tests, sputum and blood may point the way to differentiation. On opening the abdomen, a characteristic exudate is found, which is not essentially different from that occurring in pneumonia, empyema or in a pneumococcal arthritis. It is without odor, it varies according to its length of standing, from a seropurulent to purulent, with the same pronounced tendency to the production of fibrin that is so peculiar to inflammatory exudates of pneumococcal origin. It may be either walled off or free, and shows a tendency to pocket by plastic adhesions, especially in the low lying fossæ. In the absence of any intestinal or pelvic lesion, the diagnosis will usually be strongly suggested by the discovery of such an abdominal exudate. Smears and culture invariably show the presence of pneumococci.

The mortality is high in the diffuse or fulminating types. The two cases reported in this paper resulted in death. In fifty-four cases reported by Reschbieth all the patients with the diffuse type, forty-five in number, died. It may be stated that the mortality in this type varied on available statistics, being between 85 and 90 per cent. In the localized type practically all cases should recover, if surgical intervention is reasonably early and simple drainage established. As a matter of fact, however, statistics show a mortality of from 10 per cent. to 15 per cent. in this type.

TREATMENT

In the localized form surgical measures have been very satisfactory provided efficient drainage is established. In the diffuse type, we are dealing with an active septicemia and a patient overwhelmed with toxemia. With abdominal tension but slightly increased and drainage almost certain to be purely local in effect, it is difficult to see how much can be accomplished in a surgical way. Certain cases have recovered following operation, but it is most probable that without operation such cases would have gone on to the localized form type. We believe with Deaver that "nonoperative measures designed to cause subsidence and localization should be used until the stormy symptoms subside, if they do subside."

Such an attitude presumes a rather accurate and certain diagnosis, and to withhold one's hand in the face of such uncertainty will be difficult.

Two cases of localized pneumococcic peritonitis, a boy of 7 and a girl of 13, have been observed. Each gave a history of a severe illness lasting ten days to two weeks, followed by improvement and the development of a mass below the umbilicus. Both came to the hospital in fairly good condition after appearance of the subumbilical mass.

On opening these well walled off abscesses a thick, creamy, odorless pus was found, cultures from which showed pneumococci. Recovery followed in each instance.

Case 1.—Female child, aged 5, entered hospital May, 1915, on the fourth day of her illness, with history of abdominal pain, vomiting and diarrhea of sudden onset. Examination revealed: pulse, 120; temperature, 102; respirations, 34. The child was restless and irritable. There was slight tenderness and muscular rigidity over entire abdomen, though most marked in lower portion. Peristalsis was present. Leukocytosis was 20,000. Examination of throat and ears was negative. No cough, no physical signs in chest. Diagnosis was made of peritonitis, probably appendiceal in origin.

Operation.—Midline incision. Peritoneum, visceral and parietal, was red and congested. Free fluid with slight tendency to pocketing was found in pelvis and right kidney pouch. This fluid was more serous than purulent in nature, and contained many large flakes of fibrin. Appendix was free, its peritoneal coat not differing in appearance from the other visceral peritoneum. Pelvic organs showed nothing. The appendix was removed and free drainage placed in pelvis and right kidney pouch. No improvement followed operation. The vomiting and pain were unusually severe. The patient died on the seventh day of her illness, about sixty hours after operation. Cultures from peritoneal fluid showed pneumococci.

Case 2.—Female child, aged 4, entered hospital.

March, 1917, thirty hours after onset, with history of generalized abdominal pain, followed by vomiting. No diarrhea. Examination revealed: temperature, 104; pulse, 160; respirations, 44. Prostration of child was very marked. She was in a semicomatose condition and paid little attention to surroundings; chest was pronounced normal by four examiners. Abdomen showed that the respirations were abdominal in type. Slight tenderness and rigidity over entire abdomen existed, but most marked over lower right quadrant. Peristalsis was present but feeble. There was no distention.

When the abdomen was opened about 1 dram of thick, flaky, nonodorous pus escaped. Appendix was normal. Exploration of pelvis revealed about 2 drams of pus at this site. Areas of intestines and parietal peritoneum, as well as the pelvic organs, were markedly congested. The pelvis was drained. The culture showed pneumococcus. The child died in seventy-two hours, and necropsy revealed nothing more than was noted at operation.

704 College Avenue.

DISCUSSION

Dr. Evan O'Neill Kane, Kane: We cannot thank Dr. Meredith too much for calling to our attention another proof that the appendix is not always the cause of those inflammatory conditions within the abdomen that forty years ago were invariably termed idiopathic peritonitis. We are also greatly indebted to him for so clearly defined a differential diagnosis, whereby he has afforded the surgeon a concise conception of these puzzling phenomena. We must still, however, remain somewhat in doubt as to both the predisposing and determining factors unless exploratory incision or necropsy furnish positive evidence. The minority who recover must always remain questionable cases.

The patient who suffers seriously from germ infection may be said to be more or less sick all over. He may have appeared yesterday to have "chest trouble," pleuritic, pulmonary or cardiac; today meningeal or cerebral; and tomorrow his case may settle down into one of abdominal symptom complex, from which we are able to draw definite conclusions as one or another viscus succumbs most readily to the invading organism. Thus the influenza germ may have started in by attacking constitutionally, found its first point of vulnerability in the middle ear, been vanquished here and passed on to try its hand in turn lower down. So I suppose many of Dr. Meredith's cases, after "setting in" by an overwhelming dose of pneumococcal general infection, and having been defeated in several local battle fields, have finally "struck in" as conquerors where he astutely discovered them within a vulnerable peritoneal cavity.

Physicians are too prone to run hobbies, despite every effort to be liberal, and I must own that in cases of the sort here proved to be pneumococcic peritonitis I would have made the blunder of operating for appendicitis, and if disappointed by findings and results would have contented myself by assuming the cause to have been some obscure localized traumatism, such as so often occurs unobserved in children, and on which had become ingrafted a pneumococcic infection. Especially would those cases, wherein a localized area of infection has resulted, thus mislead. Dr. Meredith has pointed out, as an added difficulty in obtaining a clear diagnosis in such patients, that they are generally children. From children a satisfactory subjective history is unobtainable. Usually all they say is, "headache," or "belly ache," "hungry" or "thirsty."

I fear that the positive diagnosis of primary pneumococcic peritonitis must generally remain questionable, despite its certain identity; there are so many misleading possibilities, and laboratory evidence is neither infallible nor convincing.

Valuable time is lost in waiting for laboratory findings. If we have a case of fulminant appendicitis, and many of these cases appear to be of that character, we are hazarding our patient by waiting for the laboratory report. Finally, when we have received it, if supposed to be pneumococcic it is still a question whether to operate. Dr. Meredith thinks it is better to wait. I would like to ask if Dr. Meredith tried Dakin's fluid in these cases. I have employed it in two instances of severe septic peritonitis, one a gangrenous appendix; the other, tubal disease. The abdomen was washed out thoroughly with Dakin's fluid in both cases, which went on to a complete recovery, although they seemed desperate. Apparently there have been no adhesions as a result.

Dr. Robert M. Entwisle, Pittsburgh: None of the Dakin solution was used in any of these cases. The last one was the only one seen by Dr. Meredith since the Dakin has been used. Nothing was done, but simply drainage.

TREATMENT OF FRACTURE OF THE PATELLA *

C. D. SCHAEFFER, M.D.

ALLENTOWN

Fracture of the patella is an accident which is rare in individuals under 18 years, yet Dr. H. C. Deaver reports a patient aged 12 years, on whom he operated for the cure of this injury with full restoration of joint function. Most of these fractures occur in individuals between the ages of 33 and 43 years, the period of greatest activity.

In the series of cases treated, 20 broke the left patella, and 17 the right. Twenty-four of these were of the usual transverse type with the larger fragment above, 9 with the larger fragment below, 4 were comminuted, none compound.

The most frequent site of the fracture is the lower third of the bone due to anatomical conditions at the time of the accident. Roentgen-ray examination made with the knee joint in the three positions, viz., extension, semiflexion, and acute flexion, shows that the patella with the knee semiflexed is at the highest point of the condyles of the femur, which is the most unsupported point, and the one at which the fracture most frequently occurs. Any sudden strain, exciting a violent contraction of the quadriceps extensor muscle with perhaps a blow on this part of the bone, is the most direct, or perhaps the most frequent cause of this fracture. Fractures, the result of a kick, are usually compound and comminuted.

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* Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

The handling of these cases resolves itself into the operative and nonoperative treatment. Eminent physicians argue that there should be no nonoperative treatment in these cases; and, on the other hand, men of equal eminence oppose operative methods, contending that they are too dangerous. They are content with fibrous union which always follows nonoperative procedures which has a tendency of fragment separation; while the operative method of treatment is usually followed by osseous union with the absence of this tendency.

In nearly all cases the fragments of the fracture can be brought together with adhesive plaster and a posterior splint, but the capsule of the bone hangs down over the edge of the fragments and thus prevents the osteogenetic elements of the fragments from coming in contact one with the other which favors fibrous or ligamentous union. Patients with this kind of union complain much more of weakness in the leg, after recovery, than do those who have osseous union, and as elongation of this fibrous band progresses the quadriceps extensor muscle contracts and becomes shorter: this causes these patients, on going down a long hill or many steps, to complain of weakness and fatigue in the knee, and in certain conditions of emergency the knee joint gives way, permitting a fall that may produce serious injury to other parts of the body. A useful limb can be obtained with nonoperative methods, but seldom as perfect and useful as with the operative methods.

Nonoperative methods cannot meet the following pathological conditions, viz., the tilting of the fragments; hemorrhage into the joint; the inversion over the fragments of the periosteum and prepatellar tissues, preventing the accurate apposition of the fracture surfaces and consequently interfering with the bringing together in close contact the osteogenetic elements of the fragments; and, lastly, the lateral laceration of the aponeurosis, which is much larger refracture than in the original injury. Records of refracture of this bone are abundant in literature, indicating its frequency. Two patients in our series had a refracture; one three years after the first fracture, and the other five years. Both were operated on the second time with good joint function.

Literature abounds with reports of cases treated with nonoperative and subcutaneous methods for the approximation of the fragments, formerly lauded, tried, and now abandoned, because of the imperfect restoration of the full function of the limb. Some patients later sought operative treatment in order to lessen or overcome their disability, which is proof per se that the nonoperative and the subcutaneous methods are attended with deficiencies which prevent them from ever becoming elective methods of treatment. Operation in these cases at a late date is not attended with as satisfactory results as are obtained with primary operation. The quadriceps femoris muscle has become shortened, the edges of the bone have become covered and must be freshened, rendering contact of the surfaces of the fragments difficult or impossible, and consequently demands lengthening of the muscle itself, or of its fibrous expansion, or the moving up of the tubercle of the tibia to which the patella ligament is attached.

Unfortunately, this extensive operation never results in a very satisfactory joint function such as is obtained in the primary operation. Therefore, procrastination in the treatment has no place.

Callous union can no longer be denied because roentgen-ray and necropsy examination prove its formation in the process of repair. Osseous union found at necropsies have been reported by Vallas, Mahr, Miul, and others.

Operative procedures are contraindicated in fracture of the patella in diabetic patients, advanced tubercular, cardiac, renal, and hepatic diseases; in longitudinal fracture without displacement; in fracture without laceration or tearing of the prepatellar tissues. In these cases nonoperative treatment should be instituted using adhesive plaster above and below the fragments with a posterior splint. If carefully applied, fibrous union can usually be obtained but the patient exhibits a weakness in the knee joint in going down a long hill or many steps, which is the best test of the function of the joint.

The time of the operation is important, for an early, thorough and uncomplicated cure. Dr. Murphy says: "My reasons for postponing the operation from six to ten days is to give the synovial membrane an opportunity to react to the irritation of the trauma and the irritation of the blood clot in the joint. The reaction produces a coffer-damming of the lymph spaces in the subendothelial layers of the synovial membrane and lessens the danger of infection very materially."

We resort to an injection of 10 c.c. of formalin and glycerin solution into the joint immediately after the fracture. This produces a chemical irritation, increases the number of polymorphonuclear leukocytes in the joint and increases the constitutional polymorphonuclear reaction. It also coffer-dams the lymph spaces and insures prophylaxis against infection. The operation is then done five to seven days after the injection.

We prefer the U-shaped incision with the convex surface above, if the circulation is good, because in kneeling the scar is drawn up and cannot become irritated. The skin is injected with a .4 per cent. solution of cocain and adrenalin and the U-shaped incision made, the flap dissected up from the prepatellar tissue. The fracture surfaces are then inspected and the intervening clot removed with forceps, avoiding entering the wound with the fingers or the touching of instruments at the point at which they are to be introduced into the wound. The clots should be picked out with forceps and washed out with normal saline solution because the retention of such clots may become foreign bodies in the joints, undergo organization, requiring their removal by subsequent operation.

In a few of the first patients treated by operation with silver wire, according to Patty's method, roentgen-ray examination a few days after operation showed that the outer margin of the fragments were in contact one with the other but the lower part had given way, permitting a separation of the fragments at this point. We resort to absorbable sutures. The unabsorbable sutures frequently irritate the tissues, lower their vitality, favor infection, and then require removal. They sometimes become loosened, may break and fragments may escape into the joint and start a synovitis. In most of the cases treated, a circumferential suture was placed around the fragments without tying it at this time. The prepatellar tissues and capsular ligament are then carefully sutured with chromicized catgut, after which the circumferential suture is tied, which brings together firmly the bony parts of the fragments so essential in obtaining osseous union. It is not essential that the fragments are held together with great firmness. Mere close apposition is ample. The forcible tying tends to defeat its own end, because a suture drawn tight can cause, in a bone as well as in other tissues, a local pressure necrosis and absorption.

The joint should be closed without drainage because experiments prove that if the synovial membrane is exposed to the air for forty-eight hours the endothelial cells of this membrane are so injured as to do irreparable damage to the articulation. Complete restoration of the function of the joint demands a careful closure of the articulation with the exclusion of air.

The skin incision is closed with horse hair, the line of suture penciled with a 30 per cent. silver solution, and a dressing applied. The joint is kept quiet for ten days when passive motion is established and massage of the quadriceps extensor muscle and the tissues below the knee is begun but the tissues over the joint are untouched. On the fourteenth day after operation, during dressing, the limb is flexed from five to ten degrees, which can be done without causing tension on the sutures. This slight movement is desirous and facilitates convalescence. The fixation of the joint is continued for three weeks when the splint is removed and the patient allowed to move and bend the joint. In another week, osseous union is complete and the function of the joint fairly well restored. During the course of treatment the leg should be slightly flexed on the abdomen in order to relax the quadriceps femoris muscle. It is well to remember here as well as in any other bony structure that it takes from 28 to 35 days for osseous union to be fairly complete.

The first attempt at flexion should be cautiously made and the range of motion gradually increased. In thirty-three cases treated with the above methods the restoration of the joint function was complete and only when the flexion to a right angle was attained was the patient discharged from our care.

28 North Eighth Street.

DISCUSSION

Dr. Moses Behrend, Philadelphia: I am exceedingly glad to have heard Dr. Schaeffer's paper. It corresponds with the technic I am accustomed to carry out in every detail. It is absolutely unnecessary to use silver wire in the cure of this condition. The circumferential suture is without doubt the best method of treating fractured patella. His technic in operating on these cases, as outlined by Lane, no finger contact, must be absolutely adhered to in order to prevent infection. A word of caution in performing the operation for fracture of the patella in people past 60 years of age must be given. In those individuals one must take great care that passive motion be introduced early, because if it is not the patient will undoubtedly have a stiff leg, but in a very good position. I cannot conceive of any case of fracture of the patella being healed with bony union without an open operation. If one has done many of these operations one will notice that the fascia and clotted blood will get between the ends of the bone and it will be impossible to bring these fragments together without an open operation. The suture that is used is chromic catgut No. 2. I have not used kangaroo suture for many years and I have long since given up the silver wire suture. I have had bad experiences with silver wire, the fragments becoming infected, whereas with catgut No. 2 the results have been most remarkable.

Dr. Ernest Laplace, Philadelphia: I wish to congratulate Dr. Schaeffer on what seems to be the ideal technic. I think he has fulfilled every indication and there is very little to be said. A long road has been traveled by all surgeons before this technic has been reached and I believe Dr. Schaeffer has in this paper distilled all the methods that have been used and got from each the best point. Mechanically it is right; the whole of the raw surface must be brought together for close contact. Anatomically he is right in suturing the aponeurosis and the lateral ligament. Pathologically he is right in keeping his hands out of the wound.

Dr. Schaeffer, closing: I expected to show some roentgen-ray slides of fractures of the patella treated with and without operation, proving that osseous union of the entire thickness of the bone can be obtained by means of operation but is never obtained without it. The ligamentous union resulting in ordinary treatment has a tendency, as these pictures show, to fragment separation which causes weakness of the knee joint. This condition may precipitate the patient on going down a steep hill or long steps which may result in injury to other parts of the body. This is the best test of the complete restoration of the full function of the joint.

THE CONSIDERATION OF THE SURGICAL FACTORS IN TUBERCULOUS PERITONITIS *

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Tuberculous peritonitis, as a primary disease of the peritoneum, is not common. From a total of 12,807 operations during the past five years, ending June last, at the Methodist Hospital, the records show that but twenty-three of these were patients operated for tuberculosis of the peritoneum unassociated with demonstrable tuberculosis of the lungs. Two of these even may have had their starting point outside of the peritoneum as one of them was affected with tuberculosis of the dorsal vertebrae and the other of the hip. All the others clearly had their beginning in the peritoneum or in an abdominal organ covered with peritoneum.

This experience does not prove youth or sex a determining factor, as 52 per cent. were between the ages of 30 and 50; thirteen were males and ten females; and the youngest subject was 4 years of age, the oldest 67. The interabdominal organs with coexisting disease were the liver, the pylorus, the kidneys, female generative organs and the appendix. Sixteen of the series were of the exudative form; the adhesive type occurred, with one exception, in females past the age of 35.

Further analysis of this group shows that the lesions of the disease (pathologic anatomy) differ considerably, but the differences in the main are of tuberculous deposit and the secondary result, not in the real nature of the disease. In some instances, the peritoneum was found thickly studded over with tuberculous grains; in others they were clustered in local zones; in none of the patients, though, was miliary tuberculosis demonstrable. This was because those patients suffering from general tuberculosis were excluded as proper surgical subjects and could not benefit by surgical treatment, for surgery is only beneficial when the disease appears as a tuberculous inflammation of the serosa with the invasion probably through the lymph channels and blood vessels. Here the peritoneum is swollen, the vessels injected, its surface becomes rough and covered with grayish nodules which tend to coalesce and form large nodules. The exudate accompanying this stage is fibrinous, seropurulent or hemorrhagic, or it may be a combination of these different kinds. The exudative form is associated with abundant fluid. This soon follows the appearance of the tubercular granules and it is the form which gives the most favorable prognosis following operative treatment.

The second, or adhesive form, is accompanied by adhesions which form large nodular tumors in the omentum and mesentery due to the organization of layer after layer of fibrous exudate, which finally undergoes cicatricial contraction of the peritoneal folds and clumping together either the entire or local areas of intestinal coils. This form is probably, in the main, the cause of the third or ulcerative type. Here the omentum and coils of intestines are massed together by adhesions with caseous and purulent pockets concealed between the adherent coils of intestines. Ulceration of the mucous layer of the bowel is not an uncommon result, the ulcers at times going on to perforation with fecal extravasation into sacks limited by previous adhesions.

SYMPTOMATOLOGY

The dividing line between those different forms is not sharp. Neither the first symptoms nor its progress are uniform. They vary according to the extent and situation of the trouble. The only things uniformly attending it are tubercles on the peritoneum, more or less inflammatory effusion, chiefly of lymph and serum; tumor and hardness of bowel, which is generally local; deranged functions of the stomach and intestines; and emaciation.

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* Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 27, 1917.

The course is usually chronic, aggravated from time to time by acute attacks; again, the invasion may be stealthy and deceiving, its existence becoming suspected only after a perceptible swelling of the abdomen attracts attention. This time, there will be tympany, slight colicky pains, rarely severe enough to be attributed to an inflammation of the peritoneum unless there is partial or total obstruction, which may early and suddenly occur in the adhesive form. The pulse rate is increased to from 90 to 100; tenderness on pressure is slight; vomiting is not usual or stormy in character as in acute peritonitis; contraction of the mesentery or adhesions of the intestines may cause complete obstruction which carries with it the symptoms characteristic of ileus. In some instances the fluid is excessive, distending the abdominal walls; in others it would be confined by adhesions suggesting a cystic tumor; in some, diseases of the liver, the kidneys, pylorus, the urinary bladder and the female generative organs coexist, giving symptoms that obscure those of tubercular peritonitis.

Rupture of a tuberculous ulcer may bring about purulent inflammation, which may be either diffused or localized; here the symptoms cannot with readiness be separated from another form of peritonitis.

DIAGNOSIS

At first the diagnosis is unavoidably uncertain. In this series, in twenty-one out of the twenty-three patients the abdominal symptoms were the first to appear and in most of the patients were early vague and indefinite. Later the true character of the disease became more apparent. It is essentially a chronic process and extremely difficult to differentiate from cirrhosis of the liver with ascites or intestinal malignancy. The presence of free or encapsulated exudate or nodular tumors in different parts of the abdomen are equally difficult to exclude, while chronic nontubercular peritonitis could only be differentiated by the laboratory making clear the existence of the disease by the reaction following the tuberculin test or the guinea-pig injection.

From the standpoint of treatment and prognosis, it is far more essential to differentiate the different forms of the disease for, in the serous type, treatment by operation results in cure of most of the patients, with good results in adhesive forms, while the ulcerative form is obviously not good.

TREATMENT

The treatment is simple. A medium abdominal incision will allow escape of all fluid exudate. Reaction is slight. If fluid reaccumulates, it is as quickly resorbed. In the adhesive form, care must be taken to avoid wounding the intestine, because it is often extensively adherent to the abdominal peritoneum. In the ulcerative form, operative treatment is likely to be followed by intestinal fistula and results are not good.

The contra-indications to operation in any form are fever, advanced pulmonary disease or amyloid change in the intestines and kidneys. Unless tubercular lesions in the abdomen are found well localized as in the tubes, appendix or omentum, it is best not to remove them until the patient has recovered. Unless resection of the intestine is urgently demanded at the same time operation is done for cure of the tubercular peritonitis, it too should be postponed as results are generally unsatisfactory. If serious adhesions obstruct the intestines, then entero-anastomosis, which is the simplest procedure, can be employed. Well-organized adhesions are best left, since attempt to separate the intestines will likely tear them. The tuberculous serosa tears easily and stitches hold poorly.

Just how operation for tubercular peritonitis benefits the patient has not as yet been made clear. Perhaps the helpful factors are several, as the relief of tension by evacuation of the fluid exudate and irritation of the serosa. Collateral circulation is established which results in greater abundance of leukocytes which act against the tubercle bacilli. These and others may be the forces which promote recovery, for certainly the ultimate results in operation for the exudative form, as well as the immediate results, are good. This is no less true so far as the immediate results are concerned of the adhesive type, though operation does not cure all of these. However, it benefits most of them.

1222 Spruce Street.

DISCUSSION

Dr. H. B. Gibby, Wilkes-Barre: Probably the most important lesson to be derived from Dr. Hammond's paper is the importance of a careful study of these cases of vague abdominal symptoms. I take it from Dr. Hammond's paper that he considers the various classifications he has made of this condition to be simply different stages of the same condition, of course modified by the virulence of the infection, and the location and the resistance of the patient. That being the case the earlier this condition is diagnosed and submitted to operation the better will be our results. I think we are too much inclined to attribute these cases of vague abdominal pains to neurasthenia and to simply put the patients off, thinking that there is nothing very definite the matter with them when a little careful study would probably reveal beginning tubercular peritonitis. Some of these cases apparently begin without any effusion; whether there is some slight effusion and it is aborted, whether this is due to the variety of the infection (I believe 50 per cent. are supposed to be due to the bovine variety of the tubercle bacillus), or whether due to the resistance of the patient is hard to tell. To be brief, the condition is sometimes very difficult to distinguish from malignancy. I remember distinctly a case I had in early surgical work. The patient, a young woman, presented a mass in the right iliac region, had a temperature of 99 to 101 F., tenderness and symptoms which led me to make a diagnosis of appendicitis with abscess. On operation I found the whole cecum involved in a mass of friable tissue. I made a diagnosis of carcinoma. At first I thought the case was one suitable for removal of the cecum, but after splitting the external layer of the mesocecum I discovered that the glandular involvement was so great that it was impossible to do a complete removal and I closed the abdomen and gave the relatives a grave prognosis. To my great surprise and pleasure the patient made a rapid recovery; in six weeks the mass, which was almost as large as my fist, had entirely disappeared. I have had several cases since in which I was entirely at sea until the specimen had been removed and examined by the microscope, and in some cases where the condition apparently did not justify that procedure the result later proved that the case was one of tubercular trouble and not malignancy. The early symptoms which are of importance are possibly first the deranged intestinal function, which is, of course, a common symptom in a great many cases; the slight colicky pains and, possibly most important, the loss of weight. At times there is some fever; at other times there is apparently no rise of temperature. But if these cases are very carefully studied and watched for a short time we can, as a rule, come to a diagnosis. I am not an advocate of opening the abdomen to make the diagnosis without very careful study beforehand, but I think the earlier these cases are discovered and the earlier they are operated on (in fact that is true of all surgical conditions), the lower is the mortality and the morbidity. In just what way this operation does good we do not know. We can theorize, but the fact that it does do good is incontrovertible. The operation is very simple, as Dr. Hammond has said, and I agree with him, that unless the focus is well localized it is better not to attempt removal. I frequently remove the tubes; in fact, I always do if I consider them the focus of infection, and the appendix if the cecum is not too badly involved.

Dr. M. Behrend, Philadelphia: The diagnosis of primary tubercular peritonitis is one of the most difficult in surgery and medicine. About nine months ago I operated on a servant in a doctor's family and the diagnosis was not made until the abdomen was opened. It was suspected but no diagnosis was made. On opening the abdomen the entire peritoneal surface was studded with hard tubercular nodules. The uterus, tubes and ovaries were effaced. The intestines were hardly seen on account of tubercles present. Absolutely no healthy peritoneum could be seen. The case was operated on and a very gloomy prognosis was given since the girl was engaged to be married. She was sent to the country after the operation. I kept in close touch with her doctor after she left the city. To our surprise this young girl felt so well seven months after the operation that she was married. This illustrates the fact that opening the abdomen and closing cures these cases.

Dr. William H. Glynn, Pittsburgh: For some years in the postoperative surgical treatment I have been using the electric light. It was suggested to me by Dr. Bennett that it might be of some value in tubercular peritonitis, and several months ago I began using it when observing any form of exudation and my results have been very satisfactory. As. Dr. Hammond stated, the prognosis is very good in all cases. In a great number of cases after operation I find that the light lessens the pain and particularly in the adhesive form, and as it has rather a physiologic action and can do no harm I think it should be tried in all of these conditions. I have a patient, 27 years of age, under treatment at the present time, whose abdomen I opened up five or six months ago for adhesive tubercular peritonitis; she has had very little pain and has practically none at the present time. I consider her practically well. The lamp I use is 100-watt nitrogen gas filled lamp. It is the actinic rays that we wish to obtain and while we do not get the same number through the nitrogen as from the arc I think we get sufficient to get results and of course the nitrogen gas filled lamp is much more easily obtained than the open arc. I have an open arc which was imported from Germany some years ago; as it is difficult to get carbon filaments I have discontinued its use. We can use the ordinary Tungsten gas filled lamp.

Dr. Ernest Laplace, Philadelphia: I have often been surprised at the absence of tuberculosis of the lungs in cases of tuberculosis of the peritoneum. I believe that the explanation is largely due to the fact that tuberculous peritonitis is of the bovine type and that the lung is not so susceptible as the intestine to that particular type. Its gate of entrance, as in children, is through the gastro-intestinal tract. Most likely it develops in the appendix. It is a tubercular appendicitis; the bacilli may gradually migrate from the inflamed tuberculous appendix and the tuberculosis is planted like so many colonies on the peritoneum. It stands to reason that the sooner the condition is recognized the more successful will be the surgical intervention. The von Pirquet test helps in the diagnosis. If negative it means nothing; if positive it means much. Clinically, the irritation of the peritoneum results in a general induration of the abdominal wall. Probably the theory of counter-irritation produced by the incision and exposure of the peritoneum to the outer air may help to explain the method of cure.

DID HER BIT

"Don't you want to lend a hand to our soldier boys on the other side?" asked the orator at the woman's meeting.

"Lend a hand?" piped out one of the sweet young things. "Why I gave my hand to one before he went over!"—*Yonkers Statesman.*

THE TREATMENT OF CHRONIC HYPERTROPHIC RHINITIS*

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LANCASTER

I shall attempt to make a general résumé of the treatment of this common malady rather than to expound any new theory or to present any startling departure in the hitherto well-established methods of procedure.

I was not a little surprised at the few articles that were to be found in the literature on this subject and all the textbooks both old and new were so much the same that when you read one standard book of the type of Bosworth or Ballenger, in English, and A. Bruck and others in German, you practically have read them all. In other words to quote from the book of Ballenger, he states, "Be assured that hypertrophic rhinitis is a surgical rather than a medical disease. Be assured also that hypertrophic rhinitis cannot be cured by sprays and other local medicinal applications, although they may temporarily relieve some of the symptoms." This quotation will sum up in a few words the standard teachings of all the recognized textbooks; of course there are some few extremely minor modifications of technic in procedure as well as variations in the drugs used or the instruments employed.

My personal ideas in regard to the treatment of this disease are at variance with this generally accepted teaching as it has appeared to me to be entirely wrong to do turbinectomies either complete or partial, as there cannot possibly help but be a great disturbance in the secretion of the mucous membrane, thereby causing other symptoms equally as annoying as the nasal stenosis, namely, pharyngitis sicca, crusting, etc.

My idea of this condition is that the treatment must begin in childhood and a decided attempt be made to insure that a proper development of the superior maxillæ is obtained, and to my mind the disease we now designate as hypertrophic rhinitis is really only a lack of development in childhood rather than a definite disease of the adult. I am not alone in this belief; Dr. M. J. Dewey in an article written on "The Cause of the Failure of Some Rhinological Operations," also calls attention to the lack of development caused by mouthbreathing. Indeed to my mind it appears that if you have a properly developed superior maxillary bone the turbinates have the proper amount of space to develop and there is no tendency toward nasal disease such as you see in the contracted, narrow nares of the habitual mouthbreather. This is further substantiated in an article by Dr. Dunbar Roy in a report on "Statistics of 1,500 Colored Patients Treated at the Atlanta College of Medicine" in which he makes the statement, "It is surprising how few of these patients had trouble with the nose." We all are familiar with this type of nose and know how wide it is. Is this not an argument to support my idea?

To revert to the direct modes of treatment, there is an overwhelming majority in favor of the partial turbinectomy as against the complete removal of the turbinate, especially when the inferior turbinate is the structure to be attacked. For myself I prefer to try the very much older method of repeated cauterizations with fused beads of chromic acid as recommended by Bosworth. This has the advantage of destroying but little tissue that is necessary for secreting purposes and if deeply applied, either from the outside or submucously, the resulting scar will give a very considerable shrinking after it heals. I realize that this is not even considered any more by many operators and is regarded as belonging to the dark ages but I do not like the electric cautery because the intense heat cannot be controlled and certainly the reaction in my hands has been more violent and the subsequent cicatrix not as deep or as firm as that which I have been getting with the chromic acid. This applies more particularly to that general type of moderate degree of hypertrophy with some intumescence.

For markedly hypertrophic turbinates, there is no other recourse than surgery of some form or other, the most commonly used being the operation brought forward by Dr. Sidney Yankauer and modified in many ways according to the individual operator's own ideas and capabilities. Essentially it consists of a V-shaped incision in the turbinate and a bringing together of the free edges so as to have no raw surfaces exposed. This operation is not as easy as it appears and the bringing together of the edges is the chief drawback. Dr. Joseph C. Beck has devised a conchotribe whereby he crushes the edges and brings them together, and from histologic examination made later he states: "I have made sections of these hypertrophies of the inferior turbinated body so crushed, and have found on the third day, at the height of the reaction, marked round-cell infiltration and areas of necrobiosis. Removing another piece on the tenth day, I found the tissue practically all shrunken and very little evidence of organized tissue. The result was correspondingly good as to breathing and drainage." This method is simpler than the suture method and possibly more within the scope of the average operator's abilities as the introduction of the sutures in the original operation is the stumbling block.

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* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

Dr. Otto Freer states that all turbinates should be removed by the submucous route and adds the caution that resection of the turbinates should never be employed to open the naris where deflection of the septum is the cause of the obstruction, as in his experience the resection of the septum almost always had to be done later at any rate.

Dr. J. A. Cavanaugh in an article recommends what is essentially the Yankauer operation and states, "I consider it a great exception where an inferior turbinate should be totally removed and cannot agree with those who advocate its removal in practically all cases and preserving the septum."

Dr. Dudley S. Reynolds states, "The chemical cautery is not worthy of consideration and the galvanocautery is of value only in the turgescent type." He, too, advocates the modified Yankauer operation and advises the ignipuncture method in using the electric cautery.

M. St. Clair Thompson, in his book published in 1916, states that "there is no excuse for complete turbinectomy; the inferior turbinate should never be completely removed; that there is no marked ill effect following complete removal of the middle turbinate; and that submucous resection of the septum has supplied us with a satisfactory method for correcting nasal obstruction while preserving physiologically important mucosa so that there is no longer any need to sacrifice the valuable secreting surface of the inferior turbinate."

Moraweck and Hall, on the other hand, go to extremely radical procedures and I shall quote their paper fully because of its variance with the generally accepted teachings. They report 100 cases of complete removal of the inferior turbinates, sometimes on both sides, and have never seen the distressing dryness that is so often spoken about. They had no complications of any kind and give the following as indications for the procedure they advocate: (1) Difficulty in blowing the nose with retained secretions; (2) nose too narrow for free respiration; (3) catching cold easily, mouthbreathing at night and large collections to be expelled in the morning; (4) cases where two sides alternately open and close with one side always closed; (5) large turbinate of nodular variety that does not shrink on application of adrenalin and cocain; (6) where nose is occluded on one side, due to septal deformity which is of such a nature as to defy correction; (7) remove turbinate on concave side of septal deflection first, allow same to heal and then do septal operation; (8) to gain access to other regions; (9) chronic catarrhal state in the middle ear, particularly posterior end hypertrophy; (10) in chronic catarrhal conditions of the throat with cough, dropping, hypertrophy of the lymphoid tissues in the pharynx; (11) in many so-called rheumatic throats after all else fails this may afford relief and finally they go on to state that it would be a valuable adjunct in the treatment of hay-fever. The technic is to cut away the turbinate at its insertion and the anesthesia is produced by means of powdered cocain being rubbed into its body after the manner of Freer.

The operation by means of Struyken's forceps is a very popular method but my criticism is that I have been absolutely unable to control the direction of the cut and when I had completed the cutting I always had removed a considerably larger portion of the turbinate than I had originally started out to remove. The same holds true with the snare, saw, scissors, etc., that depend on force that has to be applied "around a corner," so to speak.

This brings us next to a consideration of the electric cautery which has, perhaps, not so large a following as the cutting operation has, but what they lack in numbers they make up in enthusiasm.

The most commonly employed procedure is the simple application of the cautery in a straight line from the posterior end of the turbinate to the anterior end and repeating it if necessary later on. Many men, notably Dr. Beaman Douglass, Dr. Otto Freer, Dr. Reynolds, advise that the linear cauterizations should be discontinued and in their stead use ignipuncture at various parts of the turbinate, one quarter of an inch apart. Dr. Henry Horn of the University of Bonn advises that after a previous submucous resection of the tissues has been made, the cautery should be applied after the method of ignipuncture rather than by linear cauterization.

Dr. Greenfield Sluder, whose writings merit the utmost consideration because of their thoroughly scientific and original nature, has given us in his recent paper a procedure that is scientific, adaptable to varying conditions, and to some operators, an easily acquired technic, which in his hands has given good results after eighteen years' use. In the beginning he calls attention to "the extension forward and upward on to the nasal process of the maxilla and anterior to it, making a pad as it were, which is found to be located at the point of critical narrowing, i. e., the inlet of the nostril." "This is more marked in noses with poorly developed external alae." This fact I have earlier in the paper attributed to improper development in childhood and this could possibly be avoided by prevention rather than attempting to correct it in later years. Dr. Sluder goes on to state that "the cross-section is less here than anywhere else unless it be at the posterior outlet. The swelling is more often, however, developed in greater degree backward over its posterior end, often reaching to the eustachian tube and beyond it." His operation is worthy of serious consideration as the results in 1,000 cases covering seventeen years showed only three cases requiring packing for bleeding, four occasions of swelling of the cheek where the downward and forward incision was unusually far forward, one case of middle-ear inflammation.

He works with an extremely strong current and specially constructed electrodes which are adjustable so as to include much or little tissue as the circumstances may require. Personally I have had no experience with this operation but mean to try it out in the near future as most certainly his results justify anyone in trying to acquire the necessary technic.

In a personal communication he stated that "the entire story is largely told in the statement, 'Some men can and others cannot operate in the nose with a galvanocautery.'"

Dr. Robert C. Lynch in a personal communication states, "As to the diagnosis we bear in mind always, in cases of hypertrophic rhinitis, the possibility of leprosy in the simple type; this being excluded, those which will not contract under cocain and adrenalin must demand some surgical procedure for the reestablishment of the breath-way. In these borderline cases we rely on the galvanocautery. I believe in the sacrifice of every other portion of the nose before the inferior turbinate, feeling that this is the most important functionary part of the organ."

Dr. Westerman in a paper presented in 1905, goes into extensive description of the microscopic and pathologic examination of the turbinate tissues at various times after the operation, beginning with the examination immediately after cauterizing and at 24, 48, 72, and 96 hours, 7, 10, 16, and 30 days, and 6 months. His final summary contains the following quotation: "Compared with the depth of the cauterization, the superficial cauterization is extensive. The destruction of the epithelium is extreme."

Concerning the vaccine treatment, I have had very disappointing results in a number of cases so that I discontinued it some three years ago. I have asked that Dr. George M. Coates, whose work along the line of vaccines has been very extensive and whose integrity is beyond question, to express his opinion on the vaccine therapy in this condition. He states: "My opinion is that vaccines will not have any direct effect on hypertrophic rhinitis, that is, the hypertrophic condition of the mucous membrane. They will, however, reduce the individual's tendency to repeated infections or colds, which, as we know, increase the tendency to hypertrophy. In this manner, they are useful adjuncts to other lines of treatment, surgery, etc. Furthermore, when you have a hypertrophic rhinitis accompanied by considerable discharge, whether that comes from the sinuses or not, and particularly the latter, vaccines will often help get it under control. In regard to the type of vaccine, I believe that a good autogenous vaccine is probably the best for treatment but it must be really a good one, otherwise, better results can be obtained from the stock. I use stock entirely for prophylaxis and believe that theoretically as well as practically, it is the best."

Dr. Ruth Tunnicliff reports in a paper that she has found in the nose under various conditions what she has termed the bacillus rhinitis. It was found in 6 per cent. of all normal noses, 98 per cent. of all cases of acute rhinitis, and 90 per cent. of all cases of chronic rhinitis. She further states that "it has some etiologic relation to acute and chronic rhinitis; that it produced rhinitis experimentally with recovery in pure culture; that it was constant in both acute and chronic cases and generally absent in normal cases; that it produced in persons with acute and chronic rhinitis injected with the bacillus, specific antibodies, viz., opsonins and complement binding bodies."

Dr. C. M. Miller reports Case No. 10 of his series where his patient was improved by the use of vaccines.

Drs. Logan-Turner and Bolton report a series of fifty cases treated by vaccines, one case having had a partial turbinectomy, the others having apparently been treated for other conditions, where vaccines were instituted and no decided benefit. In the discussion the general trend of the views was that vaccines were extremely doubtful and should not be too vigorously pushed.

In conclusion it appears to my mind that (1) the treatment of this condition must be begun in childhood when a tendency to the narrow nasal cavities is first observed. The palatal arch must be broadened and proper development insured and in this way give more room in the nose. (2) The chemical cautery still holds out a definite means of relief in the more mild cases. (3) The surgical treatment will doubtless remain the more popular mode of correcting the trouble because it is quickly done and is a definite relief, although only so far as the breathing is concerned, the other symptoms of frequent colds, postnasal discharge, etc., in my hands not having been in all cases entirely removed. (4) The electric cautery promises when the technic is acquired to be the most efficient because it is more readily controlled and more adaptable to all cases. (5) Vaccine therapy according to our present knowledge is useless unless the bacillus rhinitis of Tunnicliff is definitely proven to be the actual causative agent of the trouble. Should a vaccine made of this particular organism develop antibodies and complement fixation bodies sufficient to overcome the disease, then we will have a definite agent to the relief of this condition.

I desire to extend my sincere thanks to Drs. Greenfield Sluder, George M. Coates, Robert C. Lynch, Joseph C. Beck and Dunbar Roy for their valuable suggestions and cooperation in the preparation of this paper.

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DISCUSSION

Dr. N. S. Weinberger, Sayre: I congratulate Dr. Stein on his excellent paper and endorse practically all that he has said. Surgery is overwhelmingly and almost universally favored. Surgical procedures can be controlled better than the cauteries, and when carefully performed produce a better effect. The amount of destruction of mucous membrane of the inferior turbinate can scarcely condemn surgery, since, when the different procedures are compared with the results obtained in breathing space, the scar tissue resulting from cauterization is greater than that following well performed and easily controlled surgery. Dryness of the throat and crusting do not depend alone on loss of mucous membrane of part of the inferior turbinate, but on substituted scar tissue with the superadded secondary glandular atrophy from irritating secretions and discharges which should receive just as great consideration as the restricted breathing space in determining the mode and the point of attack of any operative procedures. In fact, the pathological changes occurring from the irritation of heavy and adhesive secretions during the natural course of hypertrophic rhinitis will in time result in the vascular and glandular tissues becoming atrophied from the contraction incident to true hyperplasia.

The removal of the middle turbinate, as Dr. Stein has inferred and on which I wish to lay more stress, whether hypertrophied or not will give a great deal of added breathing space and is a necessary part of the operative procedure in the attack on the diseased sinuses, which so often accompany this condition. In addition this allows free passage of air through the upper chambers, thus affording better ventilation of the sinuses while in no way destroying any of the integrity of the nose, but producing a most beneficial effect. The removal of the middle turbinate may need to be supplemented by the removal of septal hypertrophies which are often present high up anteriorly, or a submucous resection for deviations, ridges, and spurs, and also the removal of the hypertrophied end of the inferior turbinate. If unavoidable the inferior turbinate may be attacked surgically or with the cautery as one's operative experience and technic best serves conservatism.

I fully agree with Dr. Stein that the treatment of hypertrophic rhinitis should begin in childhood and feel certain that, with better supervision of the teeth, tonsils, and adenoids in children, and the septum in adolescents, a more normal development of the superior maxilla is encouraged and the number and the extent of hypertrophy in this class of cases greatly diminished.

Dr. J. Paul Roebuck, Lancaster: From the standpoint of treatment in a hypertrophic condition, I think without question cautery enters in, especially where shrinkage occurs after applying cocain or adrenalin, and the same is complete and down to the mark; a line of cautery, either chemical or actual, without question will be more or less satisfactory to the patient as a final result. If the condition is bony and the removal of bone is effected according to Ballenger's or any other method, there is no question but what the patient will get the result. In the above cases you do not destroy the mucous membrane. I think, however, an equal and more simple method is to draw a submucous line of fracture, then complete with a Sullivan dilating speculum as used with his rasp set. If the proper line is drawn through the turbinate bone, collapse will occur, and the result will be satisfactory to the patient without destroying the mucous membrane or making a line of cautery.

Dr. Harvey M. Becker, Sunbury: One of the speakers said that no untoward results would follow the removal of the middle turbinate, in so far as obstruction of the breathing was concerned. I want to try to produce a little argument against that by asking the gentleman to examine his cases in which he removed the middle turbinate ten or fifteen years ago, and try to determine what effort nature has made to fill that abnormally large hole. We will probably find that, in the ethmoidal region of the septum opposite the location originally of the middle turbinate, there will be a high hyperplasia of the mucous membrane over the septum, much on the order of this hypertrophic form of rhinitis that you speak of occurring over the turbinates. That is not an unusual thing to find in my locality, where we had several great turbinotomy artists fifteen years ago. Finding a very thick septum in the ethmoidal region, not bony but membranous, is one of the things that made me discontinue the removal of the middle turbinate eight or ten years ago. I looked on the other man's work as an error in surgery. I hold to the rule today: to conserve in any way possible, by refraction of the middle turbinate, rather than its removal, to offset this subsequent thickening that occurs in the mucous membrane in that locality on the septum.

Dr. Clinton J. Kistler, Lehighton: Where you have a true hypertrophic condition with cellular infiltration, due to the diseases of childhood, septal obstructions, faulty breathing, etc., there is only one thing to be done, and that is to make room. But those of us who were general practitioners in our earlier years will realize that there is a large class of cases of hypertrophic conditions in the nose which are directly due to systemic conditions; a man who drinks a lot of beer, a man who habitually overeats, the woman with pelvic trouble, will have a stopped up nose, a turgested nose, and will often have what is called or miscalled, hypertrophic rhinitis.

Now I think it is absolutely wrong to cut or cauterize before you try simple cleansing, saline solutions, a course of sodium phosphate in the morning and restriction in the way of living. It is surprising how many cases of apparent hypertrophic rhinitis will be greatly benefited and often relieved by these methods. I need not mention the use of cocain in the differential diagnosis.

I think men should not be in a hurry to remove the turbinate until they have assured themselves of the class of cases with which they are dealing. In other words, do not forget your general medicine in treating the nose.

Dr. Stein, closing: I am glad Dr. Weinberger agreed with everything I said, because we are often questioned in what we bring forward. I did not mean to include, as he discussed, the scar tissue in the nose. I had no reference whatever to the crusting on the scars following any operation. I more particularly referred to that class of cases where the direct current of air strikes the throat, producing crusting in the throat, and where there has been, previous to the operation, perfectly normal mucous membrane. The deflected septum, of course, is the cause for some of it. I did not include that. I simply meant that the type we know as hypertrophic rhinitis we class as cases where there is no appreciable cause. I did not mean to include pelvic trouble or anything of that sort, because that is the cause, and of course you do not want to go ahead and remove the turbinates before you remove the cause, if you can discover one. The paper was absolutely limited to undiscoverable causes of hypertrophic rhinitis and methods of procedure were meant for those cases.

In regard to Dr. Roebuck's reference to bony hypertrophy, Dr. Beck, probably one of the best authorities in that work, has clearly pointed out that the bony hypertrophy in any turbinate is extremely rare. That practically can be ruled out, and the hypertrophy is limited to the structure covering the turbinate bones. His method of treating the enlarged turbinates, the bony hypertrophy, I think, is a very good one, because it gets them out of the way.

Possibly Dr. Becker did not go back to fifteen years before his man had been operated on for hypertrophy of the turbinates. I don't doubt that any of you have seen a great many noses with the hypertrophy on the septum that he speaks about, even without any hypertrophy of the turbinate bone or covering of the turbinate bone. If you will look at some of the noses I think you will find the great majority of them have a thickening in the mucous membrane that he refers to, which he attributed to the lack of the middle turbinate on that side.

TRAUMATIC SIXTH AND SEVENTH NERVE PARALYSIS; OPERATIVE TREATMENT OF SAME, WITH FUNCTIONAL RECOVERY *

TIMOTHY J. MORAN, M.D.
PITTSBURGH

The complete functional recovery of muscles supplied by the abducens and facial nerves, following operative procedures for paralysis, is sufficient warrant, I trust, for presenting this patient and paper. Furthermore, Dr. Landon has kindly consented to discuss the facial paralysis, with which he had to do, and with whom I jointly operated.

The close association of these nerves explains the occurrence of paralysis in their distribution with a lesion situated, as in this case, in the vicinity of the pons.

The patient, Steve N., aged 19, following a fracture of the base of the skull, June 15, 1916, exhibited a paralysis of left side of face and paralysis of right abducens. I saw him in consultation with Dr. Landon Aug. 30, 1916, six weeks after injury. Patient was then ambulatory, well nourished and complained of homonymous diplopia with its coincident phenomena, dizziness, nausea, etc.

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* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

Examination revealed a fixed, convergent squint of right eye, approximately 35 degrees, pupils round, equal and reacted for light and accommodation, fundus negative and vision 20/20, each eye. Patient was kept under daily observation for a period of two months and, showing no response or improvement to measures instituted, was operated on, Oct. 5, 1916, under general anesthetic, at West Penn Hospital.

Following an anastomosis of facial to hypoglossus by Dr. Landon, an L-shaped conjunctival flap was made at the attachment of superior rectus, and the tendon split in the median line from insertion backward, and outer half freed. By the same procedure, the outer half of inferior rectus was split and freed. The conjunctiva between them was thoroughly undermined, and the freed outer halves of each were brought subconjunctivally to external rectus and sutured securely under its insertion, following a third L-shaped conjunctival flap at that point. Flaps were then sutured and both eyes bandaged several days.

Convalescence was uneventful and binocular fixation was established almost immediately up to median line, diplopia developing only after abduction passed that point. From that time until Jan. 1, 1917, date of discharge, binocular fixation extended by gradual degrees until possible in extreme abduction, and has remained so since.

It was my good fortune while in Vienna, in 1910, to have seen Lauber do this same operation, which up to this time, as I recall, had been recorded only a few times, and with indifferent success. Since then, I have seen several instances recorded, but as yet no case in which two cranial nerves were involved at the same time with simultaneous operative recovery.

The theory for this operation is based on associated movements of the eyes; it must be performed before too great a time has elapsed between paralysis and the tendon transplantation; and is more favorable, of course, in a young, robust individual, all of which factors it was our good fortune to combine.

Jenkins Arcade Building.

DISCUSSION

Dr. L. H. Landon, Pittsburgh: In dealing with the facial paralysis in this case, the subject of Dr. Moran's report, the trunk of the facial nerve divided as high up as possible within the canal, was united by end-to-end anastomosis to the cut central end of the hypoglossal nerve. Contrary to what would off hand be expected, this procedure is not one of great difficulty, the mechanical difficulties are negligible; the essentials are a good working knowledge of the anatomy of this region, the position, relations and course of the nerves, and a clean bloodless dissection in attempting their exposure.

The results already obtaining in this case, you have seen. It may confidently be anticipated that further progress in functional improvement will continue for the next one and a half to two years, at which time we may expect practically complete return of all voluntary movements of the muscles supplied. While it may never be as good as a perfectly normal face, it will be infinitely better than a permanently paralyzed face.

There is no more interesting field in neurological surgery, nor in fact in any surgery, than that of the cranial nerves. Nor anywhere is operative interference more amply justified by results than in the correction or alleviation of disturbances affecting these structures, and yet how often do we see individuals, whether from ignorance or fear, enduring the sufferings of trifacial neuralgia or the embarrassing disfigurements of a facial palsy, year after year before, or without ever, availing themselves of the relief that surgery affords. During the past year I have had occasion to do the radical operation, avulsion of the sensory root, on seven cases of tic douloureux. With a single exception all these patients had suffered without relief for over twelve years, notwithstanding that during all this time they had been under the care of their physicians and had all been subjected to minor procedures, injection of or avulsion of one or more peripheral branches. The high mortality accompanying the early efforts at attack on the ganglion no longer obtain and cannot be used against their employment. By the development of a special and refined technic, and the general acceptance of the Frazier-Spiller operation, wherein the ganglion itself, so often the source of dangerous hemorrhage, is not disturbed, its posterior portion alone exposed and the sensory root divided, hemorrhage and shock need no longer be feared. The risks are no more than those accompanying any major operation; recovery from its effects is rapid, and the ultimate results are the most gratifying to patient and operator.

Incidentally, I often hear fears expressed by both patient and doctor that a facial paralysis may follow this operation. This fear can be due only to ignorance of both the anatomy and function of the fifth and seventh nerves. Properly performed there is no possible way in which the seventh nerve can be permanently injured.

The facial nerve lends itself to operative interference in three types of cases, neuralgia of the sensory portion or nerve of Wrisberg, a quite uncommon lesion; facial spasm; and facial palsy. Neuralgia is indicated subjectively by intense stabbing pain in the external auditory canal and the upper posterior portion of the inner surface of the auricle. The only relief in this condition lies in the intracranial division of the motor seventh, the pars intermedia and upper portion of the eighth, in all of which sensory filaments may run. Approach is made through the posterior fossa, and while the procedure may seem formidable, these patients in order to secure relief are willing to run the risk and endure the deafness and paralysis which result. The paralysis may later be corrected by anastomosis. Permanent relief from pain results.

We should have no hesitancy in recommending alcoholic injection into the facial trunk or, in case this fails, even section of the nerve at the stylomastoid foramen and anastomosis of the distal stump to the hypoglossal in cases of severe and intractable facial spasm. This removes control of the facial muscles from a perverted set of cortical cells and gives it to another set. I refer to true facial spasm and not to the ordinary habit grimace or tic, a physiologic perversion usually controlled by proper nonoperative procedures.

In dealing with facial paralysis certain questions arise as to the types in which operation is indicated, the time at which it should be undertaken, the nerve to choose for anastomosis, and the probability of and time at which we may expect favorable results. Obviously the procedure would be hopeless in lesions by the nerve peripheral to the main trunk or at least distal from its two main branches. It is best suited for cases in which the paralysis is due to injury to the nerve somewhere between the stylomastoid foramen and the cerebral cortex.

The chief point for argument is the time at which operation should be undertaken. When there are no general contra-indications, I believe that we should operate just as soon as it is evident, from persistence of the reactions of degeneration and absence of returning function, that spontaneous regeneration will not occur.

In general it may be said that if the symptoms persist for six months, regeneration is not likely to occur. Of course, we may more safely wait for a longer period in cases, such as Bell's palsy, not due to physical injury. In cases following operation on the mastoid, the wound must be healed before attempting anastomosis. It should always be borne in mind that the earlier the operation, the better are the chances for full recovery.

The hypoglossal and spinal accessory nerves have both been used for the anastomosis. For various reasons, the former is preferable. The close association of the cortical centers, the medullary ganglia and the peripheral distribution of the seventh and twelfth nerves would lead one to expect that the cortical cells of the hypoglossal, rather than those of the spinal accessory, would more readily take up control of the more closely associated muscles of facial expression.

While one would expect that regeneration would more readily and more completely return when an end-to-end anastomosis, rather than a lateral implantation, were done, such is not necessarily the case, as is illustrated by this second patient shown, on whom the latter operation was performed about nine months before Dr. Moran's patient was operated on.

Beginning return of function may be looked for in from four to six months and continuing for at least two years. One should not despair, however, if improvement is delayed for even a year. Voluntary motion first begins through the lower fibers supplying the chin and angle of the mouth, gradually spreading upward. Closure of the eye and movements of the eyebrow and forehead are last to return.

The use of electricity and massage to improve the nutrition and tone of the paralyzed muscles and nerves is indicated during the regeneration period. The rapidity and extent of improvement depend to a marked extent on voluntary efforts and exercises on the part of the patient. At first all the reenervated muscles act together with a resulting grimace. By constant training before the mirror control is at last gotten over individual or small related groups of muscles. Emotional symmetry of the face is hardest to regain and only comes after long and tedious practice if at all.

Dr. W. C. Posey, Philadelphia: Dr. Moran is to be congratulated for the results of his operation. The transplantation of ocular muscles so that the action from one group of muscles may be transferred to another paralyzed muscle is a procedure that should be practiced oftener. I am ashamed that I have never done the operation myself. Dr. Jackson of Denver has reported a number of successful cases of this nature. Had Dr. Moran not done this operation, this lad would have been permanently disfigured, whereas his eyes are now straight. Naturally, the field of usefulness of the operation is limited.

A point to ascertain is when it is justifiable to operate in the case of paralysis of an eye muscle following disease of the central nervous system, tabes, for instance. We all know that such palsies have a spontaneous tendency to disappear. Many, however, do not. It would be interesting to know, therefore, how long one might safely wait after the disappearance of such a palsy before advising the transference operation. I am interested to know a little more exactly just how the operation was done, and will be grateful to Dr. Moran if he will kindly sketch the steps of the operation. What sort of sutures did you use?

Dr. Moran: Catgut sutures were used for tendon fixation and ordinary silk sutures for conjunctiva.

Dr. Posey: Would you mind illustrating, Doctor, showing your technic for this operation?

Dr. Moran: Diagram No. 1 shows the speculum in place, eyeball depressed, L-shaped conjunctival flap turned back, exposing tendon of superior rectus, sectioned in median line. Diagram No. 2 shows similar exposure and section of inferior rectus. Diagram No. 3 shows exposure of external rectus. The conjunctiva between superior rectus and external rectus is then thoroughly undermined, likewise the conjunctiva between inferior rectus and external rectus. The outer half of superior rectus and the outer half of inferior rectus are then brought subconjunctivally to tendon of external rectus and sutured underneath it at its insertion. Catgut sutures are used for this and a small bite in sclera is made with this suture to insure its holding. Diagram No. 4 is a lateral view showing the split outer halves of superior and inferior recti attached under tendon of external rectus. Diagram No. 5 shows the completed result, conjunctival flaps replaced and sutured with silk.

Dr. Posey: The external rectus, then, was not divided?

Dr. Moran: No, the tendon of external rectus was simply well freed and scraped underneath at its insertion with a view to first intention union.

THE ECONOMY OF VICTORY

No matter what this war costs the Government and the people of the United States in the way of money, it is going to be much cheaper to win this war than to lose it.

The commercial and financial losses that would follow a German victory are not to be calculated. All that we spent would be lost, indemnities beyond calculation would have to be paid, and along with these losses would come a continuing loss in foreign commerce that would spell disaster.

With these material losses we would lose our national liberty and independence, our power to secure our international rights, our right to live in a world ruled by the dictates of humanity and civilization.

THE TREATMENT OF MALIGNANCY IN THE MOUTH AND THROAT BY RADIUM *

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In the treatment of malignancy of the mouth and throat with radium results have been obtained in a sufficient number of cases to entitle its use to consideration in every case, whether alone in small lesions, as an anti-operative procedure, or as a palliative method in hopelessly inoperable cases. And since even the smallest lesions are very prone to recur locally, and the adjacent glands are so early invaded, radiotherapy should follow surgical removal of even the smallest growth.

In all examinations of the mouth and throat, precancerous lesions, such as leukoplakia, should always be looked for and treated promptly. Many of the earlier epitheliomas, before they have invaded the deeper tissues, will respond to one application of radium. It is always advisable to have a consultation with an experienced laryngologist before applying radium, and the gravity of innocent looking lesions must not be overlooked nor treated by inert methods. It is to be remembered that the persistent lesions in the mouth and throat are nearly always malignant or luetic. Superficial cautery seldom removes a malignant lesion and nearly always hastens metastases.

Whatever method is selected, it must be done thoroughly. I am sorry to say that so many cases are referred after superficial cautery has been employed, and the growth has not only been aggravated but deep metastases have taken place. Many physicians, not realizing the malignancy of these lesions, will often first try cauterization or some inert mouth wash, allowing the disease to become far advanced before they refer their patients to a laryngologist or for radium treatment. There is no place were it is more important to have early and proper treatment than in the mouth and throat. The selection of the method depends not only on the location and extent of the lesion, but also on the experience of the operator or the radiotherapeutist. The brilliant results which have been obtained have induced some laryngologists to consider radium as primary treatment. But if good results from this treatment do not follow in a reasonable length of time, then the advisability of coagulation or operation must be considered.

Roentgenization of the lymphatic glands should always supplement radium therapy. The object of roentgen therapy is to control and destroy metastases in the adjacent lymphatics. The glands should be treated by roentgen therapy in the early cases because no one is ever able to tell how early the glands are invaded. Experience should have taught this to every surgeon and laryngologist as well as to every radiotherapeutist. With the roentgen rays, larger areas can be treated, and it is more practical than radium, when treating the entire cervical chain of glands. But inside the mouth the results of the roentgen rays cannot be compared with those of radium, since the latter has the advantage of coming in close contact with the disease. Then, too, we are able to give a much heavier dose by radium, even producing a caustic reaction which will heal in from two to four weeks; whereas, if this dosage were given with a Coolidge tube, of the ordinary type, or even with the one which has been suggested for cavities, the caustic reaction would not heal for months, or probably never. A slough might be the result.

In other words, both radium and the roentgen rays will produce a destructive action, but, with radium, a reaction of a much greater degree can be produced without seriously injuring healthy tissues than with the roentgen rays. This is a therapeutic difference between the two agents which it is very important to remember when treating malignant growths in the mouth and throat. In some cases, it is advisable to follow radium treatment by electric coagulation. The advantages of electric coagulation are the destruction of tissue without opening the blood and lymph vessels, and the prevention of dissemination which might occur with a cutting operation. The large amount of carcinomatous tissue which can be destroyed by electric coagulation without hemorrhage is an item of great importance, which compels serious consideration by those who have treated many malignant cases.

However, a preliminary application of radium in advanced cases is always of great service, as we have no other agent which destroys cancer cells to the same extent, and does not injure the healthy beyond repair and at the same time sterilizes the tissues.

In some cases, after radium has been pushed almost to the caustic stage, it is advisable to remove the growth surgically. I have seen a few hopeless cases, where results have been ob-

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* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 27, 1917.

tained by this method, which would otherwise have been impossible. This is more often true where the malignant growth starts in the tonsil than the buccal mucous membrane.

The best method to use is that by which all the cancer cells can be eradicated, leaving as little scar, contraction and deformity as possible, because a recurrence in the scar frequently takes place, especially if it is contracted and irritated by movement. Therefore, by whatever method the disease is eradicated, unless the resulting scar is healthy, pliable and free from contraction, it should be removed surgically.

Time will not permit my entering into the comparative uses of radium, roentgen rays, surgery, electric coagulation, cautery and the various caustics in the treatment of the different types of malignancy of the mouth and throat. As a routine procedure, radiotherapy has a place, no matter whether we are treating a small epithelioma which can be cured by one application of radium, or whether we are treating an advanced case with metastases in the glands.

The treatment of malignancy demands specialized study. Every physician or surgeon who treats malignancy should know its various forms and stages, and also know what has been accomplished by radium, roentgen rays, surgery and any other method by which results have been obtained.

Sarcoma in the nasopharynx is much more amenable to radium treatment than carcinoma. Sarcoma, even in cases where half the throat is filled with the growth, will frequently disappear in from four to six weeks after radium treatment. One patient with sarcoma whom I treated with radium has remained well three and one-half years. This is really remarkable, because his throat was almost filled with a mass, and he could scarcely swallow or speak above a whisper. I had another patient in whom the sarcoma started in the tonsil; three operations had been performed, and within five weeks after the last operation there was a recurrent mass which filled two-thirds of the throat. Within six weeks after radium treatment the growth had entirely disappeared. Did time permit I could report quite a number of similar cases. In most of these, however, the time elapsed since the treatment has not been sufficient to warrant them being called more than clinical cures.

While, as before stated, carcinoma of the mouth and throat is not so amenable to radium as is sarcoma, still some results have been obtained. For the sake of description I call the lesions which are very superficial, epitheliomas, and those which have invaded the deeper tissues, carcinoma. If ulceration is confined to the superficial layers of the buccal mucous membrane, and has not spread to the teeth, one application of radium will frequently heal the lesion. But, if the ulceration has to any extent invaded the muscle tissue, it is very resistant to radium treatment. Such cases should be given sufficient radiation to produce a marked reaction. This will usually disappear in from two to four weeks; then electric coagulation should be employed rather than a repetition of radium. This will usually heal promptly, leaving very little scarring and no contraction of the surrounding tissues. If the gums are involved, the teeth seem to act as an irritant, and the cancerous process spreads readily; but if they are extracted, it seems only to aggravate the condition.

What has just been said in regard to the buccal mucous membrane will apply to the tongue, except that the muscle tissues are earlier infiltrated, and the glands are earlier invaded.

Carcinoma of the tonsil and nasopharynx is seldom seen until glandular involvement has taken place; therefore, the results obtained by radium in this location must, as a rule, be considered from a palliative standpoint. It is advisable to give sufficient radium to produce a marked reaction. This checks the growth and sterilizes the surrounding tissues, and may make the case operable. By combining radium with operation some few cases at least have been clinically cured, where only palliation could have been produced by radiation alone, and where operation by itself would only have made the condition worse because the disease could have been but partially removed.

I am convinced if radium were employed as a routine procedure in early cases often no other treatment would be necessary, and in advanced cases when followed by coagulation or operation, better end results could be obtained. I also believe more can be accomplished by raying the adjacent lymphatics, than by removing them surgically, because if the glands are palpable, operation seems to hasten, rather than to retard the malignant process, since it is very seldom that all the cancerous cells can be removed.

The pessimistic tone of the report from the London Radium and other institutes must be discounted when it is recalled that most of these institutions treat only inoperable cases with radium and radium alone. For best results, early treatment must be given. Radium combined with other suitable measures, even in what may be hopeless and inoperable cases, give results superior to the results attained by radium alone. In this connection, I will report several cases in each group in order to show the manner in which each responds and also the limitations of radium. I have omitted epithelioma of the lower lip in this paper but, during the past three or four years, I have treated a number of cases of this kind and the results obtained are better and more uniform than those in cancer of the mouth or throat.

Case 1.—Mrs. M., aged 58, was referred by Dr. Martin. She had an epithelioma about the size of a dime involving the buccal mucous membrane of the left cheek. The ulceration had destroyed the mucous membrane, and the muscle tissue was infiltrated. She was given 200 mg. hours, and in six weeks the lesion had entirely healed, leaving the tissues perfectly healthy without any contraction. It is now over three years since the treatment and there has been no recurrence.

Case 2.—Mrs. C., aged 54, was referred by Dr. C. W. Adams for treatment of epithelioma involving the buccal mucous membrane of the inner side of the lip, and extending down almost to the gums. She was given 250 mg. hours, which produced a marked reaction. About half of the lesion healed and the rest was destroyed by electric coagulation. A month later there was no evidence of the disease, and the scar was very slight and pliable with no contraction of the tissues.

Case 3.—Mr. H., aged 39, had had a small epithelioma on the inner side of the cheek. The lesion, six weeks before he came to me for radium treatment, had been destroyed by actual cautery, which apparently aggravated the condition, and when I first saw him it had recurred and involved an area about an inch in diameter. Radium treatment was given, but only palliation was obtained. This is a case which I believe would have responded to radium followed by electric coagulation had not so much tissue been destroyed by cautery.

Case 4.—Mr. G., aged 81, came to me for radium treatment of an advanced epithelioma on the inner side of the left cheek, which also involved the gums around the last two molars, and the cervical glands were enlarged. He was given 300 mg. hours on the inside of his mouth and roentgen treatment over the cervical glands. The lesion was very much improved after the radium reaction had disappeared, and the glands were reduced in size. The remaining portion of the lesion was surgically removed, and the two last molars were extracted. At this time, the cervical glands were also removed. The wound never completely healed after the operation, and the removal of the teeth, as mentioned before in the paper, seemed to aggravate the condition. He has been given further treatment but only palliation has been secured.

Case 5.—Mr. W., aged 60, was referred by Dr. J. C. Boggs, with an epithelioma about the size of a dime involving the middle portion of the tongue. This was completely eradicated with 600 mg. hours of radium and remained well for a year and a half, when the patient died from apoplexy.

Case 6.—Mr. J., aged 57, was referred by Dr. Sherman for post radiotherapy, after the removal of a lesion under the tongue by actual cautery. Radium was used inside of the mouth, and the glands were treated from the outside with the roentgen rays. The large amount of scar which was left after cautery was almost entirely removed by radium treatment. It is now over two years since the last treatment and there has been no recurrence.

Case 7.—Mr. K., aged 54, referred by Dr. E. H. McCaulley, had an epithelioma involving the right side of the tongue. He was given 800 mg. hours of radium followed by electric coagulation. This combination completely eradicated the disease. The glands were treated externally with the roentgen rays. It is now eighteen months since the treatment and there has been no recurrence.

Case 8.—Mr. D., aged 57, was treated by radium for an inoperable carcinoma of the left tonsil. The glands were treated externally by the roentgen rays. A marked improvement was noted. Later on, the tonsil and the anterior pillar of the pharynx were removed surgically by Dr. B. M. Dickinson. It is now almost fifteen months since the operation, and the patient has remained clinically cured.

Case 9.—Mrs. S., aged 26, was referred for radium treatment for sarcoma involving the left tonsil. She was given 300 mg. hours, which produced a marked reaction. When the inflammatory reaction passed away, she was clinically cured. It is now three years and a half, and there has been no recurrence.

Case 10.—Mr. M., aged 28, was referred by Dr. F. F. Myler for a recurrent sarcoma of the nasopharynx. He had been operated on three times; the first operation, eight months ago, and the last six weeks before he was referred for radium treatment. When I first saw him, the growth filled about two thirds of the throat and was boggy in appearance. A diagnosis of sarcoma was made microscopically after the first examination. He was given 650 mg. hours of radium and after six weeks, the growth had entirely disappeared. It is now five months since the treatment, and there has been no sign of recurrence.

Case 11.—Mr. R. (case reported in the *New York Medical Journal,* July 3, 1915), with sarcoma involving the tonsil and pharynx, is still clinically cured. This was a very far-advanced case, in that the patient could only swallow liquids with difficulty, and could not speak above a whisper.

In judging the value of radium therapy in malignant growths of the orders described in the above-mentioned cases, we know that its value is incontestable; that it varies according to the region and nature of the lesion and its condition at the time radium treatment is instituted; and that, while we must not lose sight of other methods, because in many cases best results are obtained by a judicious combination of different therapeutic agencies, radium holds its own as a curative measure, and as a palliative measure supersedes all other methods.

Empire Building.

CASE REPORT *

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Mrs. A. consulted me on Sept. 17, 1914, being sent by Dr. Harmon of West Lebanon. Her family history was negative. Her present illness was of three months' duration. Examination revealed an ulcerated tumor, the size of a pecan nut, on the right side of the tongue, which Dr. Harmon had treated by various means. There was a bad tooth on that side which he thought perhaps had started this ulceration, and he extracted the tooth and kept treating the tongue, but it did not improve. In fact, it became worse. Clinically, I made a diagnosis of carcinoma of the tongue and concluded to give radium a trial. Dr. Cameron of the Standard Chemical Company was treating cases of malignant disease at his clinics, and he kindly consented to furnish radium for the treatment of this case. We sent the patient to the hospital, and according to a method used, I believe, by Dr. Bissell of New York, we split the tongue open, under general anesthesia, and buried 56 mg. of radium properly screened in the tongue, sewing it in with catgut sutures. This was left in her tongue for nine hours and then removed.

I forgot to mention that there was a lump underneath the right ramus of the jaw, about as large as a hickory nut. We did not do anything with that at the first operation, but three days later, under light anesthesia we removed this tumor, which had broken down somewhat in the center and showed no evidence of malignancy, and buried in the resulting cavity 26 mg. of radium, screened, leaving it there nine hours also. In about three or four days the patient was able to leave the hospital, and in a few days went home, with instructions to return in a short time. She returned in about six weeks in fairly good condition. The mass had left the tongue the wound underneath the jaw was completely healed. A very small scar is visible there now.

The pathologist's report showed "evidences of malignancy." He did not make a positive report of carcinoma, but said that the evidence was in favor of malignancy. The postoperative course of this case demonstrates beyond doubt that this was a malignant growth of the tongue, for the reason that in about two and a half months there was a recurrence, and the tongue became quite large. The ulceration was worse than it was in the beginning. The case altogether assumed a very hopeless condition, and we were very much discouraged in regard to the outcome. In consultation with Dr. Cameron and his assistants we decided to use larger and more frequent doses of radium. The patient had applications of radium, 50 mg., for two hours at a time, every day for three days. Then she came back at monthly intervals and had quite heavy treatments, one consisting of 100 mg. for three hours. The operation was in October, 1914. The last treatment with radium was in May, 1915.

Another point to which I wish to call your attention is that, following the recurrence of this malignant condition of her tongue, the patient had a cervical adenitis. A chain of glands down the posterior portion of the neck became involved; as we considered the use of radium for the enlarged cervical glands contraindicated, we decided to use the roentgen ray, and Dr. Johnston very effectually gave just one Coolidge tube treatment. The glands disappeared and have not returned.

If you will notice the dates here, the patient first consulted me Sept. 14, 1914. The operation occurred early in October, 1914, and at this time, practically three years later, her tongue is cured. Of course there is a slight scar in the tongue and there was quite a severe burn on the buccal surface of the cheek; but that has disappeared, leaving only a scar. This burn gave her trouble for two or three months. She was not able to take hot drinks or anything of that kind. The soreness, however, has disappeared, and she told me this morning that she is able to take hot drinks almost as well as ever and cold has no unpleasant effect on the tongue. I consider in Mrs. A.'s case the chief reason she is here today is because her physician at home recognized early the seriousness of the ulceration and sent her immediately for treatment.

Regarding the question of proper dosage in radium therapy, I can remember, perhaps ten years ago, Dr. George C. Johnston of this city, in discussing the use of roentgen ray therapy at a state society meeting, said one thing that stands out very distinctly in my mind: "Quinin will cure malaria, but it certainly will not if but two grains of it are given once a day. The proper dose of quinin will cure malaria, and likewise the proper radiation by roentgen rays of external malignant disease will cure malignancy." So I would like to paraphrase that, giving Dr. Johnston due credit. The proper use of radium, in the vast majority of cases, applied in time, will certainly cure most of these conditions of malignancy of the mouth and tongue.

I mentioned the roentgen ray for cervical adenitis, as being more appropriate than radium for this condition.

Still another point I wish to call to your attention is the frequent observation of the patient, in Mrs. A's case every two months.

A very practical point is that every hospital in every city should have a sufficient amount of radium to treat the cases that need it, the treatment to be given under expert supervision as the roentgen ray now is. The paper that has been brought out recently by Dr. John G. Clark of Philadelphia, and a later one by his assistant, Dr. Keene, as well as the current literature, certainly would make this appear necessary.

Note: April 22, 1918, patient is still in excellent condition.

Jenkins Arcade Building.

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* Presented before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 27, 1917.

DISCUSSION

ON PAPERS OF DRS. BOGGS AND BRENNEMAN

Dr. Archibald A. MacLachlan, Pittsburgh: Dr. Boggs has given us a most excellent résumé of the present status of radium.

As a former essayist said, when radium first came to public notice, its fascinating physical properties led to a great deal of hope about its value that was not fully realized, and a great many of the profession began to think it was absolutely worthless in the treatment of malignancy. Dr. Boggs, however, and a number of other men, both in this country and Europe, have continued to work with the substance until a mass of clinical experience has been accumulated which gives us a very definite method of its employment in certain cases. I believe that it is probably the most valuable treatment we have for beginning sarcoma of the mouth and throat. From the cases I have seen treated by Dr. Boggs I am sure it is the first treatment I would try.

In superficial epithelioma, especially around the nares and other places visible, it is the best treatment from the patient's standpoint, because the lesion is removed with no noticeable scarring in comparison with that which follows a plastic operation.

In a case of mine of inoperable endothelioma of the antrum of Highmore that had been persistently rayed without any stoppage of the violent hemorrhages from which the patient suffered, a few applications of radium absolutely stopped the hemorrhage. Dr. Boggs tells me that this result is due to an obliterating endarteritis that is produced by the use of this substance, which is quite a valuable point in such cases.

In deep and nonoperable carcinoma of the larynx and throat, radium seems to relieve the pain and make the patient more comfortable and I believe it is the thing to use.

Dr. B. Alexander Randall, Philadelphia: Having no throat clinic now, I have seen but few of these cases, but one a little while ago interested me greatly, a sarcoma of the tonsil that pressed over past the middle line and forced the uvula in contact with the opposite tonsil. Under one radium treatment from the outside this so far improved that the uvula came back again into the midline, and the ulceration which was present on the surface, both of the growth and of the soft palate above, did not noticeably increase, although marked at the time of his first coming under observation. The further history of the case was unsatisfactory, however, but enormous gain was obtained by one treatment, and it certainly gave great promise as to value. I felt that the patient might have been cured if he could have endured the burying of the radium tube in the growth, and without the sloughing which was likely to take place producing fatal hemorrhage.

Dr. Boggs, closing: I want to thank Dr. Brenneman for bringing us this interesting case. The results certainly were excellent, but I do not agree with the method, the burying of radium in the tissue. I believe that when you open up the tissue with the knife, you can just as well remove the malignant tissue and be rid of it, because you have already opened the lymphatics and blood vessels. I believe that is one of the reasons of not obtaining better results in some of the radium institutes, and I think it is only a very short time until they will condemn such a method. We know today, as has been pointed out by Deaver, Bloodgood and other surgeons, that, if you open up the blood supply in sarcoma and the lymphatics in carcinoma and do an incomplete operation, it increases the malignancy. Dr. Bloodgood makes the unreserved statement that an incomplete operation always hastens death.

There is a great difference in the degree of malignancy and in the various types of carcinoma and sarcoma. Lesions situated on the mucous membranes are usually very malignant in character, and this should always be kept in mind when treating cancerous growths in the mouth and throat. Small lesions will often be removed by one application of radium, but if we have an advanced case we must give a larger dose, and it may be necessary to remove the remaining tissue, which may have undergone degeneration. The best results can be obtained where we have the cooperation of the laryngologist, the same as I had with Dr. Dickinson. All cases when operated on should at least have postradium treatment. It has been stated that all hospitals should have radium. I would be glad to see radium in hospitals, but this would be like having a roentgen-ray machine with an unqualified operator. There is no use of having radium in hospitals unless you have a competent physician who has studied radiotherapy for at least a couple of years. I am producing better results today than I did the first year I employed radium. The radium is the same, but my technic is better. I have been using radium for four years, and reported one case in a paper over three and a half years ago.

FUNCTIONAL TESTS OF THE KIDNEY IN DIAGNOSIS AND PROGNOSIS *

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Of all the organs of the body the kidney lends itself most readily to a study of its function by functional tests and this is due to the fact that the product of its activity, the urine, is so available, and secondly that the blood, the material upon which the kidney acts, is also obtainable for investigation. The conditions, therefore, more nearly approach those of an accurate experiment than do those inherent to other organs such as the thyroid, pancreas, liver, etc. But even under such favorable conditions the successful testing of renal function remains difficult and is complicated by several factors.

In the first place it must be remembered that the function of the kidney is not a single, simple process but that it is multiple and complex, and that no single test can do more than tell us the state of one renal function or give us one aspect of the combined functions of the kidney. In the second place we must acknowledge that, although we know a great deal concerning the

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* Read before the Philadelphia County Medical Society, March 27, 1918.

processes carried on by the kidney, there are many gaps in our knowledge and there is much we do not know concerning the mechanism of urinary secretion and the part played in this process by the various sections of the renal unit. There are theories concerning the function of the glomerulus and of the various parts of the tubule, and there are some facts, but to be honest it must be admitted that the theories are only theories and we must not so blindly accept any one theory as to disbelieve isolated but proved facts which disagree with it.

A third point of view, and one which applies to vital functional testing in general, is the importance of keeping in mind the influence of extraneous factors which tend to falsify results and lead to misinterpretations. As an example of this let me remind you of the marked influence of passive congestion upon the tests of renal function.

Keeping in mind these three difficulties: the complexity of kidney function, our lack of final knowledge as to the mechanism of urinary secretion, and the importance of extrarenal factors, let us proceed.

The kidney is chiefly concerned with the elimination from the body (1) of water, (2) of the nitrogenous waste products of metabolism, urea, uric acid, ammonia, amino-acids etc., and (3) of certain salts, especially sodium chlorid. Along each of these lines functional tests have been applied with more or less success and the simplest test merely estimates the ability of the kidney to dispose of a normal intake of such substances under normal conditions. But the healthy kidney always functions somewhat below its maximum strength and always has a certain reserve power which can be called upon when needed. The loss of this reserve is the first demonstrable evidence of renal disease. It has, therefore, been found best to give a quantity of the test substance, water, urea or salt, which will be eliminated by the normal kidney only by calling upon its reserves and which even the slightly impaired kidney will be unable to promptly dispose of because its reserve has been lost. Not only must the quantitative appearance of the substance be measured but the time relation is just as important for even a markedly diseased kidney will always eliminate the increased amount of water, salt or urea, if given time.

Thus to an increased ingestion of water the normal kidney will respond within the first half hour with a definite polyuria of urine of lowered specific gravity, of lowered content of solids and a diminished freezing point. On the other hand a low water intake should bring about the secretion of a more concentrated urine with a higher specific gravity. A failure of the specific gravity to rise to 1.020 or even 1.030 under such conditions is one of the surest signs of true nephritis.

Similarly if an individual is in a state of sodium chlorid equilibrium and is perhaps receiving and eliminating 5 grams of salt a day, the addition for one day of 5 or 10 more grams of sodium chlorid should be followed by the elimination of almost the whole amount given, within twenty-four hours. Extrarenal factors being ruled out, a delay in the appearance of the increased amount of salt signifies renal disease. Many refinements of interpretation have been applied to this test but are as yet unproven.

The same sort of test may be applied to the kidneys' ability to eliminate nitrogenous end products of metabolism, the chief one being urea by the ingestion or injection into the circulation, of a known amount of urea, preferably about 30 grams, and the observation of the rapidity and completeness of elimination. There should occur a sharp rise in the urea excretion not later than the second two-hour period and the elimination of the urea should be complete within 24 hours. Any delay would speak for renal inadequacy if extrarenal factors could be rigidly excluded. It is not necessary at this day again to kill the dead by referring to the entire uselessness of estimations of urinary urea if unaccompanied by exact control of the intake of all protein food and of the nitrogen loss in the feces. The extrarenal factors are too many for any reliance to be placed on the test except under extremely favorable conditions.

These separate tests of the kidneys' ability to dispose of known amounts of water, protein and salts may be combined and the patient placed on a diet containing known quantities of these substances and the results observed. This, however, is usually done in conjunction with studies on the blood.

So far the tests described depend upon examination of the urine and there are others also limited to the urine such as the determination of freezing point and the estimation of urinary toxicity but these latter are not widely employed.

Let us now turn to the blood which must sooner or later show the results of any depreciation of renal activity. This is especially true in connection with the end results of protein digestion; the total nitrogen, the urea, uric acid and other nitrogenous fractions of the blood.

The healthy kidney keeps the blood content of each of these down to a quite constant level but disease of the kidney soon results in an increase of these substances in the blood, a fact roughly recognized almost a century ago. Urea, whose nitrogen normally makes up about 50 per cent. of the normal 30 mg. of total non-coagulable nitrogen of the blood, is the easiest to estimate and of the various fractions shows the greatest variations in renal disease, forming a higher and higher per cent. of the whole as the total non-coagulable nitrogen increases. Study of the other nitrogen fractions is more difficult and adds little or nothing to our information concerning the renal function. The estimation of the blood urea nitrogen is therefore most commonly employed and a more or less proportional increase in the other smaller nitrogen fractions is taken for granted.

Combined studies of the blood urea nitrogen and of the rate and quantity of excretion of urea in the urine have been many and attempts have been made to express the relationship of the urinary urea and the blood urea in a formula which would give the functional efficiency of the kidney in mathematical terms as an index. None have proved wholly satisfactory and the method is scarcely one for general clinical use.

The estimation of the sodium chlorid of the blood is not difficult but has only a limited application.

The remaining group of tests is based upon the introduction into the body of some substance foreign to the organism but which is eliminated by the kidneys and of which it is possible to determine the rate and quantity of excretion. In this class of substance belong lactose, potassium iodid, methylene-blue, indigo, carmin and phenolsulphonephthalein, but the number of substances which might be used is countless. Perhaps the earliest observations along this line was in 1830 when it was noticed that after ingestion of turpentine in certain gouty individuals the substance failed to render the urine odorous as it does in healthy persons. Seven years later the same observation was made with regard to asparagus. A few years later it began to be noted that many drugs which normally pass through the kidneys fail to do so in nephritis. Such drugs are mercury, salicylates, iodids, bromids, etc.

Advantages have been claimed for each of the test substances and the elimination of some of them has been attributed to certain parts of the urinary tubule, but here again we are treading on doubtful ground. Lactose was supposed to be secreted by the glomerulus and potassium iodid by the tubule but later evidence has been varied and contradictory. Of the dyes indigo-carmine is used more extensively in Europe and phthalein in this country. Each has its advocates and the arguments are based more on technic than on diagnostic results as each supplies almost identical information.

Of the various tests which have been mentioned four stand out as of especial usefulness and value and are being more and more employed to the exclusion of all others. These four are (1) the testing of the ability of the kidney to eliminate water and to dilute or concentrate the urine; (2) the elimination of salt test; (3) the estimation of blood urea nitrogen and (4) the phthalein test, and the coming remarks on diagnosis and prognosis will be in terms of these tests.

Diagnosis by functional tests may be considered from four points of view. (1) The test may give information concerning the kidneys' ability to perform a given function; (2) an estimate of the degree of renal impairment by nephritis may be attempted from one or more tests; (3) an estimate of the patient's condition at the moment may be obtained; (4) an attempt may be made to draw conclusions concerning the anatomical lesions in the kidneys. This latter can not be very successfully undertaken in the present state of our knowledge. Nor does the kidneys' ability to perform a given function interest us very much unless it can be corrected with other information to help us in diagnosis or prognosis. It, therefore, remains to discuss how functional tests may help us in diagnosis of nephritis and how much they can tell us of the patient's immediate condition with respect to such an event as uremia.

Let us look at the findings with these tests in the commoner forms of nephritis.

The test of provoked polyuria is of chief value in the recognition of acute nephritis, simple degenerative nephritis, and of passive congestion of the kidneys. In these conditions the water eliminating function of the kidney is depressed and there will be a delay or insufficient response to the free ingestion of water. On the other hand even in the advanced stages of chronic glomerulonephritis or arteriosclerotic nephritis this test results in a normal response even after other renal functional tests show extreme impairment.

The variation in the specific gravity also helps us here, and runs almost the opposite of the test by provoked polyuria. In acute nephritis, degenerative nephritis and passive congestion, the conditions in which the water elimination function is impaired, the kidneys' ability to secrete a urine of high specific gravity is retained, while in chronic glomerulonephritis and arteriosclerotic nephritis the kidney can only eliminate urine of a more or less fixed specific gravity, about 1.012 to 1.014, and this can not be raised even after a dry diet for twenty-four hours. This failure to concentrate is one of the best tests for true chronic glomerulonephritis and is certainly the easiest to perform.

The test of chlorid elimination is often the earliest evidence of impaired renal function. Delayed elimination will be observed in renal congestion and in practically all forms of nephritis except in those accompanied by polyuria when it is rare. Marked impairment of chlorid excretion is usually associated with edema, but edema may be absent and the test is really of more value diagnostically in those cases in which edema is not present.

The estimation of the blood urea nitrogen, while not as easily carried out as the water and phthalein tests, is still not difficult for the practitioner who can send the blood to an available laboratory, and the information obtained well justifies the trouble and expense. Increase in the blood urea nitrogen is found in both the acute and the final stages of glomerulonephritis, in the late stages of arteriosclerotic nephritis and in at least certain cases of severe degenerative tubular nephritis such as some cases of bichlorid of mercury poisoning. The degree of increase is usually proportional to the degree of renal involvement, and this test above all others is little influenced by renal passive congestion. It is influenced by high protein diet, but this influence is negligible in the healthy and only becomes marked in the definitely nephritic.

The phthalein test is in all respects the best all around test of renal function. There are few renal diseases in which this test does not give a fairly true estimate of the renal function at the time. It runs parallel in most instances to the blood urea nitrogen, but it is more influenced by passive congestion. Sometimes the phthalein test may be reduced to a very low point by passive congestion, but it rapidly rises with improvement in the cardiac conditions. In degenerative nephritis the test is very variable, but as a rule it is definitely lowered and fortunately this group of cases is readily recognized clinically and the need of functional tests is less. In acute nephritis the phthalein elimination may be only moderately reduced or may be almost zero, especially in the cases of severe acute glomerulonephritis.

Its special value is in chronic glomerulonephritis. In this condition the phthalein elimination gives a very accurate estimate of the remaining kidney function, the test gradually becoming lower until a zero excretion is frequently reached before death.

To sum up: Passive congestion of the kidney may reduce or delay the provoked polyuria test and may lower the phthalein elimination. It will not, however, lead to a low or fixed specific gravity and the blood urea nitrogen will remain nearly normal.

Acute tubular or degenerative nephritis may markedly alter the results with the water test, but the concentration of the urine will remain good. There is apt to be marked impairment by the chlorid test and the phthalein test is apt to give very variable results. The blood urea nitrogen is increased in only a few of such cases. In the chronic cases of tubular nephritis the findings are similar, but there is a greater tendency to decreased phthalein elimination and increased blood urea nitrogen.

Acute glomerulonephritis may markedly reduce the water test and phthalein, but does not fix the specific gravity. The blood urea nitrogen is apt to be greatly increased.

Chronic glomerulonephritis characteristically leaves the water test normal but shows a definite fixation of the specific gravity and a failure of the kidney to concentrate the urine. The chlorid test is apt to be a little impaired but it is the phthalein test and blood urea nitrogen which most clearly evidence the progress of the disease and hint at the approach of uremia.

How much can these tests help us in prognosis? Not much, unless they first lead us to a correct diagnosis. A zero phthalein may occur in an acute nephritis from which recovery may result, or it may appear as a warning of imminent fatal uremia at the termination of a chronic case of nephritis with high blood pressure. The water test, the chlorid elimination and the phthalein merely tell us the state of kidney function at the moment. The blood urea nitrogen tells us more, in that it gives us evidence of the degree to which the body is being poisoned by retained products. Seldom, if ever, will uremia develop without a marked increase in the blood urea nitrogen.

For prognostic aid most cases will require a repetition of several functional tests, in order to ascertain the direction of change. An increasing blood urea nitrogen, or a decreasing phthalein, is very significant and a high urea nitrogen with a very low phthalein seldom persist for many weeks without the development of uremia or some other terminal tragedy.

Similarly in control of treatment the functional tests must be repeated at intervals to obtain the best results. Good therapy will soon be reflected in improved function which can be easily demonstrated by functional tests.

In conclusion let me emphasize again the importance of carefully excluding extrarenal factors and of always interpreting the tests in conjunction with routine study of the urine, the blood pressure and the patient.

1811 Spruce Street.

RADIUM IN WAR SURGERY *

WILLIAM H. CAMERON, M.D.
PITTSBURGH

In March, 1916, I published in the Journal a summary of the results obtained with radium in the treatment of backward wounds, infected and unhealed sinuses, etc., at certain military hospitals in England. The facts brought out seemed to warrant further investigation and, when in August, 1916, I received a communication from M. Barcat of France, giving a résumé of his work along the same lines, I was glad to publish[1] his findings.

This work in France was considered important enough to create, by ministerial decision, a special service on radium therapy and now I take pleasure in having translated and published in this country a review of the results he obtained during the year 1917. The report covers results obtained in the treatment of vicious cicatrices, painful cicatrices, dermatitis, atonic wounds and fistulas. Civil practice has amply demonstrated the value of radium in most of these conditions, therefore only that part of the report dealing with fistulas is herewith set forth.

I also wish to state that recently I have had an opportunity to observe the action of radium in the cicatrization of superficial wounds. These cases, four in number, were either old infected varicose ulcers (two) or clean indolent ulcers (two) following traumatism. All the cases had apparently resisted the ordinary methods including skin grafts, had been standing stationary for months and were located in the tense tissue over the tibia at the lower or middle third, and on the dorsal surface of the foot.

Under radium rays the cases improved in general appearance and, up to a certain point, the tracings indicated cicatrization progressing near the estimated curve, i. e., rate of healing comparable with the theoretical rate which it is estimated should occur in a particular wound under the most favorable circumstances. Later, with the exception of one case, progress was checked and in two cases slight retrogression was noted, the period of observation being about six weeks for all cases.

In analyzing our failure in these cases, as compared with the success in raying deep wounds or superficial wounds in soft tissue, it is thought that whereas in deep wounds we ray simultaneously tissue of the same density in these cases it was necessary to ray, at one and the same time, tissue (skin) of a high resisting power and tissue (nongranulating, sloughing surface) of a very low vitality. Had these indolent wounds been located in soft tissue, this fact would not have been so important, as raying even to a point of limited necrosis would have caused no concern—would in fact be desired. However, even a second degree reaction was not permissible (this not only because of the small amount of underlying healthy, soft tissue, but because of the poor circulation in the surrounding parts) for the resulting radium burn by not responding may have caused additional disaster.

In other words, we were placed in the same position as one who attempts to ray a skin cancer of the ear with the same intensity one would employ in raying a like condition of the cheek. In the first instance deep sloughing is to be feared owing to the cartilaginous nature of the underlying structure and the difficulty in checking progressive destruction of this particular tissue. In the latter case destruction of the surrounding healthy tissue is not of great moment and is frequently aimed at in order that the rays may affect all possible cancer cell infiltration.

I am not at liberty to give out the interesting details of these cases, but trust the point I have raised will provoke discussion.

As previously noted I herewith take pleasure in presenting the following translation:

A YEAR OF MILITARY RADIUM THERAPY

Adjunct Major Barcat

The Central Service of Radium Therapy of the ...... Region

Fistulas.—We have taken up the work of Dr. Cameron (Pennsylvania) on the radium therapy of fistulas. Cameron, early in 1916, published five cases of rapid healing (twelve to fifteen days) in rebellious fistulas in a total of seventeen cases treated by means of radium in tubes (15 to 45 mg. of radium bromid), making short applications (7 to 25 mg. hours) every second or fourth day.

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* Third communication.

[1] Pennsylvania Medical Journal, September, 1916.

Our researches have been made on forty-seven cases which have come to us after curettage had been unavailing.

These cases divide themselves into two categories: fistulas of osseous origin and fisulas of nonosseous origin.

Fistulas of osseous origin: We limited ourselves as far as possible to cases in which radiography showed no sequestrations or splinters of any size, or any foreign bodies, but a radiograph taken in a single direction does not often show even fairly large inclusions, and we have seen fistulas several times give up debris of cloth which was invisible to the rays. In Cases 4 and 5 healing was so rapid that one might ask if it was not spontaneous.

However, in thirty-seven of our cases we found there was a favorable modification of the secretions which from purulent became serous and much scantier. Twelve cases were healed, of which the following is a summary:

1. A fistula of the popliteal cavity of one year's standing, treated by daily injections of radioactive water, closed on the sixth day, opened on the twelfth day, and then finally closed after one month, the discharge having shown a progressive diminution.
2. A fistula in connection with a fracture of the cubitus of eight months' standing, treated by injections of radioactive water, healed in ten days after expulsion of a little splinter.
3. A fistula in connection with the calcaneum of two months' standing healed in eleven days after treatment of 120 mg. hours (10 mg. tube).
4. A fistula in connection with a fracture of the humerus, of three months' standing, healed in eight days after a dosage of 3 mg. hours (flat 5 mg. applicator).
5. A fistula in connection with a fracture of the ischium of seven months' standing, healed in three days after 10 mg. hours' dosage (10 mg. tube).
6. A fistula in connection with a fracture of the lower extremity of the radius of seven months' standing, healed in four days after dosage of 60 mg. hours (tube containing 27.45 mg. radium).
7. Fistula in connection with an osteophyte of the humerus of three months' standing, healed in three weeks after dosage of 120 mg. hours.
8. A fistula in connection with a fracture of the radius at the wrist of two months' standing, healed in three weeks following a dosage of 60 mg. hours.
9. A fistula in connection with a costal osteitis of traumatic origin of four months' standing, healed in fifteen days after a dosage of 28 mg. hours.
10. A fistula in connection with a fracture of the superior extremity of the forearm of five months' standing, healed in three weeks after 50 mg. hours, using a tube containing 27 mg. radium.
11. A fistula in connection with a fracture of the lower extremity of the humerus of four months' standing, healed in one month after dosage of 70 mg. hours and the removal of a small splinter.
12. A fistula in connection with a traumatic osteitis of the upper extremity of the fibula of three months' standing, healed in three weeks.

Fistulas of nonosseous origin: The cases naturally number less than those of the preceding category. Of the ten cases which we have obtained, however, a larger proportion of success has been obtained, as six were healed.

1. A fistula of the scrotum resulting from a suppurating traumatism of the tunica vaginalis, of three months' sanding, closed after three weeks following daily injections of radioactive water.
2. A fistula resulting from a nontuberculous inguinal inflammation of seven months' standing, closed in one month after the same treatment.
3. A fistula of the thorax following an operation for empyema and of six months' standing, closed in a month after daily injections of radioactive water.
4. A fistula of the thorax following a purulent traumatic pleurisy closed three weeks after the application of a tube for a total of 240 mg. hours (27.8 mg. radium in tube).
5. A fistula following a nontuberculous inguinal adenitis of three months' standing, closed in three weeks after a dosage of 320 mg. hours.
6. A fistula of the thorax following a purulent pleurisy which healed in fifteen days following a dosage of 274 mg. hours.

The four cases in which treatment was not a success were:

1. A fistula following an operation on a hydatid cyst.
2. A fistula following a tuberculous inguinal adenitis.
3. A fistula following a wound in the thigh caused by projectile with no osseous lesion but which in the course of treatment gave up cloth debris revealing the cause of its rebellious nature.
4. A stercoral fistula.

CONCLUSION

We can see by what has preceded the interest which radiotherapy presents in military medicine, mainly as concerns the treatment of vicious cicatrices, painful cicatrices, dermatitis, atonic wounds and fistulas.

SELECTION

EQUIPMENT OF THE NEWLY COMMISSIONED MEDICAL OFFICER

What outfit does an Army medical officer need, and how much must he spend for his equipment? This question is probably being asked today by thousands of physicians, either those who have already accepted commissions in the Medical Reserve Corps or those who are seriously considering doing so. The civilian doctor about to enter Army life reads with growing confusion of cots, bedding rolls, trench boots, folding buckets, basins and lanterns. He hesitates between two dilemmas, and either comes to camp without the things he needs or arrives burdened down with an immense amount of baggage which he soon finds is not necessary. He is told on the one hand that a complete outfit can be purchased for $200, and on the other that his equipment will cost him from $600 to $800. What does he really need, and where can he buy to the best advantage?

These questions cannot be answered by the presentation of any one list. The answer rather is that the Army officer, like the technical worker in civil life.

accumulates his working outfit as he needs it. There is no more reason for the Army officer to purchase his entire equipment at once than there is for a hospital intern, just beginning practice, to purchase a complete surgical equipment before opening his office. The extent of the outfit needed depends on the duty to which an officer is ordered. Is he going to training camp for a three months' course? Is he going direct to a base hospital? Or is he to be sent abroad at once? In each case his necessary equipment will differ. But few men are now being sent abroad without army training, and many of the medical officers ordered to base hospitals direct from civilian life are now being ordered into the training camps for delayed training. So, in the average case, we can assume that the newly commissioned doctor will be ordered to training camp where he will stay for one to three months, that he will then be sent to a base hospital or assigned to a field hospital ambulance company or evacuation hospital, and that at the end of two or three months more he will go to France with his organization or be sent with a replacement detachment.

But this is in the future. What the newly commissioned officer wants to know is, "What must I get before I leave home for the training camp?" The best advice to give him is, "Buy only what is actually necessary to get you to the training camp; then complete your equipment during your stay in camp by getting what you find you need from time to time by actual experience, and secure the additional equipment for overseas service when you know you are going." There are many reasons for this advice. An officer who attempts to buy his entire equipment before leaving home may be discharged for physical disability and find himself with an expensive equipment for which he has no use. He may be assigned to restricted service, in which case he will not need an overseas outfit. No matter what his assignment, it is much better for him to purchase his outfit as he needs it from personal experience, rather than to attempt to buy it complete on some other man's advice.

Equipment, then, may be divided into five groups. These are:

1. What an officer needs when reporting for duty. This he must buy before he leaves home.
2. Things he already has or can bring from home.
3. What he will need in a training camp or base hospital. These things he can and should buy after he reaches his station.
4. Articles, not necessary, but which may be purchased if desired.
5. Additional articles for overseas service.

Taking these up in order, the first list would include:

FIRST LIST

	Minimum	Maximum
Uniform	$35.00	$75.00
Cap (regulation)	2.50	2.50
Pair shoes	4.50	18.00
Pair puttees	5.00	18.00
Set collar and rank insignia	2.00	2.00
Belt	.75	.75
Military locker trunk	6.12	15.00
Bedding roll	9.00	25.00
	$64.87	$156.25

SUGGESTIONS FOR PURCHASING

In purchasing a uniform, an officer has the same liberty that a civilian has in buying his clothes. He can get them ready made or have them made to order. He can get a cheap suit or an expensive one. Officers' uniforms are made of serge, wool or whip cord. They range in price from $35 for a ready made serge or wool uniform to $75 or $80 for a whip cord uniform made to order by a military tailor. A good uniform is a necessity so long as one remains in the service. It is advisable to get as good uniform as one can afford. Wool is too hot for summer. Whip cord wears better than any other fabric, but is heavy and stiff. Probably the best thing for the average man is to get as good a serge uniform as he can afford. Ready made uniforms can be secured from dealers in any large city as Marshall Field, Mandel Brothers and the Hub, in Chicago, or Wanamaker in Philadelphia, or can be ordered by local clothiers from Hart, Schaffner and Marx, Kuppenheimer or other well known makers of ready made clothing. A regulation cap can be obtained from any dealer. It is worn only for dress, the field hat being worn in camp. Shoes cost from $4.50 in calf to $15 or $18 in officers' shell cordovan dress shoes. In whatever grade, they should be on the regulation Munson last. This is the best shoe ever made. Already shoemakers are beginning to modify the last in order to approximate the conventional narrow toed shoe. Insist on getting the original Munson last. Don't waste money on high priced cordovan dress shoes. You don't need them and you won't wear them. Get the regulation calfskin shoe and save your money for other things. Be sure the shoe fits, especially that it is wide enough. The same advice can be given about puttees. Prices range from $5 for cowhide to $18 for shell cordovan. Get a good pair of cowhide puttees, not too heavy, and be sure they fit, especially that they are not too long in the heel or under the knee. Let those who will pay $15 or $18 for pigskin or cordovan. Five or six dollars is enough, especially for camp wear. The belt should be the regulation webbing belt. Insignia include two U. S. R. and two caducei in bronze for the coat collar and two rank insignia for the shoulders. If you want to spend money, you can get sterling silver bars, but as you are going to be promoted soon, you might as well save your money and get white metal at 40 cents a pair. A regulation military locker trunk will cost from $6.12 to $15, depending on quality. Have your initials or name marked on each end and your name with "M. R. C., U. S. A.," on the top. A bedding roll is a canvas case for your mattress and bedding. It is also the catchall in which is packed everything that doesn't go in the trunk. It comes in dark brown or khaki colored canvas, with webbing straps. Prices range from $9 to $25. The $9 roll is just as good as any, but the straps are generally too small and too short. Get a pair of extra long webbing straps or two long trunk straps. Have your name stenciled on the outside of the bedding roll. What goes in the roll and how it should be packed will be considered later.

This is all that will be needed for the man ordered to report to a training camp or base hospital. It will enable him to travel to his post and report in presentable and proper condition without taking time or going to the expense of buying a lot of things that he won't need at all or that he won't need for a long time.

ADDITIONAL ARTICLES BROUGHT FROM HOME

In addition to these purchased articles, what does one need to bring from home? This is the second list. It comprises: pajamas; blankets; comfort or quilt; sheets, narrow, three pairs; pillow cases, three; slippers; bathrobe; tennis shoes; underwear; socks; handkerchiefs; toilet cases; white shirts; white collars; black tie; bath towels; blanket coat; coat hangers. Blankets for temporary use can usually be drawn from the quartermaster on memo receipt. Each officer should have at least two O. D. (olive drab) wool blankets for use in camp. For foreign service he is required to have four. If you can get the regulation U. S. O. D. wool blanket, get at least two; better three or four. If not, bring a pair of heavy blankets, preferably dark colored. Hudson Bay Company blankets are excellent, if one can get them, in dark blue or gray. One or two cotton comforts or quilts add greatly to one's comfort in sleeping. Two blankets and a comfort are warmer than four blankets. Sheets are optional and depend entirely on one's personal preferences. Some officers prefer sheets and pillow cases. Others sleep between blankets. If you want sheets, bring three or four pairs of narrow ones for an Army cot. An ordinary sheet, split lengthwise down the middle and hemmed, will make a pair of about the right width. Three or four pillow cases may also be enough. Slippers may be leather or felt, but should be soft and easy. Bring an old bathrobe to wear to the latrine when bathing. If you have an old pair of rubber-soled tennis or gymnasium shoes slip them into your trunk. They will give you much comfort in going to the bath house in wet weather and will keep your slippers dry. Underwear depends on personal preferences; wool, lisle or cotton, in two-piece, union or B. V. D., as desired. Bring plenty of it, whatever it is, for frequent changes are necessary. As to socks, probably the controversy will never be settled between those who like wool and those who don't. Some won't wear woolen socks; some won't wear anything else. *De gusibus non est disputandum.* Bring what you like, at least six pairs, and twelve are better. Handkerchiefs, at least twelve or better twenty-four, not too fine; some of these can be khaki colored. Some kind of toilet case is advisable; otherwise, toilet articles are scattered and lost. The Fitall cases in leather or canvas in varied sizes are excellent. One or two white shirts besides the one worn to report in, and half a dozen white collars may be brought for special occasions. Leave shirt studs, valuable cuff buttons, watch chains, etc., at home; also valuable watches. Plain cuff buttons, a leather watch guard and a cheap but accurate watch are best. A black, narrow four-in-hand is the only tie worn. Face and hand towels are soon discarded. A blanket coat large, heavy bath towels serve all purposes. A blanket coat for evening wear in quarters is very comfortable. Half a dozen clothes hangers in wood or wire can be brought from home or bought at a 5 and 10-cent store. A stout and roomy laundry bag with a gathering string at the top and loops with which to hang it is a great convenience. All articles should be plainly marked. In a company barracks with a hundred men *meum* is often very hard to distinguish from *tuum.* Of course, all these articles can be purchased at the camp exchange or at civilian stores after reaching camp, if desired.

PACKING

Now as to packing: Spread your bedding roll flat on the floor; turn out the flaps, head, foot and sides; fold blankets, comforts, quilts, sheets, etc., as nearly as possible the size of the bedding roll; lay in top of your bedding, as evenly as possible, your bathrobe, blanket coat and anything else that you haven't room for in your trunk; fold the head and foot flaps, then the side flaps; tie the strings that hold the flaps in place; if you have a cot, place it, tightly strapped across the head of the bedding roll; begin at the head and fold the roll over as tightly as possible; strap far enough from the ends to prevent slipping off; check the roll as baggage with your trunk.

TRAVEL ORDERS AND REPORTING FOR DUTY

As to procedure when you get your orders, "travel orders" always come from the Adjutant-General's office and not from the Surgeon-General or from a bureau chief. Telegrams or letters from any one else than the Adjutant-General are preparatory, but they are not travel orders. Your telegram should read:

> Washington, D. C., March 1, 1918.
>
> First Lieut. John C. Smith,
> *Jonesville, Wis.:*
>
> You are assigned active service. Proceed to Fort Riley, Kan., and report, April 15, Commanding Officer, M. O. T. C., for course of instruction. Travel directed necessary in military service.
>
> McCain.

Several precautions should be exercised regarding this telegram. Do not accept it over the telephone. Insist on the local telegraph office giving you a written copy. When you receive it, be sure your name is correctly spelled and that the name of the receiving office is on the telegram. This telegram is worth money to you. Without it you cannot collect mileage. If your name is misspelled or if the town where you receive it does not appear, it is worthless. See that it is correct. Having received it, do not throw it into the wastebasket or leave it on your desk. Don't put it in the pocket of your civilian coat or lock it up in your trunk. Put it in your pocketbook with your money, and don't lose it. If you want transportation, take your orders to the nearest quartermaster or recruiting officer. He will issue a transportation certificate and stamp his notation on the back of your orders. Exchange the transportation certificate at the railroad ticket office for a ticket. Don't let the ticket agent take up your telegram.

When you get to your destination, ask any officer or noncom for the Headquarters Ambulance. There is always an ambulance to meet each train for the convenience of incoming officers. Be sure to go to the place your orders direct you to report to. If ordered to report to the Commanding Officer of a Base Hospital, don't report at Fort Headquarters. If ordered to report to the Commanding Officer, M. O. T C., don't report at the Base Hospital. Go where you are told. When you get to Headquarters, ask for the Adjutant and hand him your orders. He will enroll you and assign you to quarters or tell you where to report.

ADDITIONAL EQUIPMENT FOR TRAINING CAMP

If ordered to a training camp, what additional equipment will you need?

ADDITIONAL EQUIPMENT FOR TRAINING CAMP

	Minimum	Maximum
Extra serge suit	$35.00	$50.00
Two pairs Munson shoes	9.00	16.00
Three or four flannel O. D. shirts	13.50	32.00
Field hat	2.50	6.00
Hat cord	1.50	1.50
Khaki suit	12.50	18.00
Three pairs khaki breeches	10.50	18.00
Sweater	7.50	10.00
Raincoat	2.60	50.00
Two O. D. blankets	6.12	6.12
Extra belt	.75	.75
	$101.47	$208.37

The extra serge suit is needed for a working suit, as long as serge is worn. Three pairs of shoes worn alternately will last five times as long as one pair worn continuously. At least three flannel shirts are needed. Four are better. They cost from $4.50 to $8 each. Get coat shirts of medium weight. The field hat is worn exclusively in camp. You can pay $2.50 for a regulation hat or $6 for a Stetson or Dunlap. Have your hat cord sewed on. Get an officer's hat cord, black and gold. Don't make the mistake the rooky did who came to camp wearing a General Officer's gold cord. He said that his girl gave him the handsomest one she could find as a Christmas present and he didn't like to hurt her feelings by not wearing it. Khaki is worn during warm weather. Get one blouse and three or four pairs of breeches. Be sure the breeches have hip pockets. Some haven't. Those that button at the knee are better than those that lace. Get a sweater, O. D. wool, to wear evenings. A raincoat is more necessary this time of year than any other. You can get a slicker, a poncho or a regulation raincoat for $2.60 from the Quartermaster, or you can pay $50 for an O. D. cravenette mackintosh, belted like a trench coat and lined with leather. There are many grades between. Have your rank stripes put on the sleeves. Two O. D. blankets will cost $3.06 each. An extra belt is a convenience. This additional equipment costs $101.47 minimum and $208.37 maximum. It can all be bought after reaching camp, either from the Q. M. at the camp exchange or at the civilian stores near camp. The assortment, quality and prices will be better than those in the local stores to which the average man will have access at home.

There are many things that are not necessary, that may be bought or not, as desired. These are:

OPTIONAL PURCHASES

	Minimum	Maximum
Mackinaw	$18.00	$25.00
Overcoat	35.00	75.00
Dress boots	18.00	35.00
Field boots	16.00	25.00
Rubber boots (hip)	3.50	12.00
O. D. wool uniform	35.00	50.00
Cot	3.50	4.50
Mattress	3.50	10.00
Chair	1.50	4.50
	$134.00	$241.00

Mackinaws are short coats originally worn by lumberjacks in the northern woods. They are short overcoats, belted like a Norfolk jacket. They are not regulation but are worn in camp in place of the long, heavy, cumbersome dress overcoat. The regulation overcoat is expensive and seldom worn. It is not worn abroad. Dress boots are calf, Russia or cordovan. Field boots are for rougher wear and lace over the instep or all the way up. Rubber boots are a necessity in camp in the spring. Wool uniforms are all right in winter, but are too heavy at any other time. They are required for foreign service. Whether you bring a cot or not, you will sooner or later want your own. The Gold Medal cot is used almost exclusively. The Medical Department special cot made by the company is higher, wider, stronger and covered with heavier duck than the ordinary cot. One costs $3.50; the other $4.50. The larger cot is easily worth the difference in price. Every man will sooner or later want a chair of his own. The Gold Medal chairs are also best. They come in four or five patterns, from $1.50 for the camp stool, to $4.50 for a really comfortable folding armchair. Mattresses may be obtained in silk floss, cotton, felt or hair. The minimum cost of these optional luxuries is $134; maximum, $241.

OVERSEAS EQUIPMENT

Overseas service calls for some additional equipment. It includes: basin, canvas; bucket, canvas; O. D. wool uniform; compass; cup; field glasses; flashlight; gloves, leather and woolen; folding lantern; trench coat; overshoes; long woolen stockings; folding bathtub. It is not necessary to go into details in overseas equipment. Each man is given ample notice before going abroad and has plenty of time to complete the equipment. All needed articles can be secured of the Depot Q. M., at the port of embarkation. The cost of additional equipment will average about $100.

Summing up, the expense would be:

TOTAL EXPENSE OF EQUIPMENT

	Minimum	Maximum
Cost of equipment needed to report	$ 64.87	$156.25
Needed for training camp	101.47	208.37
Additional articles which are optional	134.00	241.00
Additional overseas equipment	100.00	100.00
	$400.34	$705.62

This expense, by getting an equipment as needed, can be distributed over two or three months, possibly more. No attempt has been made to attach any value to the articles to be brought from home, as these are already in the possession of most men, and their quality and cost varies with individual taste.

LIVING EXPENSES IN CAMP

What expenses does one have in camp? Very little after one's outfit is completed. Mess bills are generally $1 a day, or $30 a month. Soap, matches, tobacco, cigars or cigarets, newspapers, postage stamps, stationery, all depend on individual taste as at home. An occasional trip to town with a dinner and a moving picture show is not very expensive dissipation, especially to those used to city prices. Laundry at the Post Laundry is cheap and generally good. Probably $50 or $55 a month would cover all necessary expenses, including mess bills.

Allowance must be made for difference in prices in different localities as well as individual taste. The articles recommended and the prices quoted above are based on nine months' experience in training camp, three as a student officer and six as an instructor. They are not intended to be dogmatic, but merely as suggestive opinions for the guidance and help of those about to enter the service.—*Jour. A. M. A.*, May 18, 1918.

PATRIOT DOLLARS

All the dollars in the world can not buy victory. Victory is not purchaseable—it is won. Dollars can work for victory only in so far as they are converted into labor and materials. A dollar hoarded is a slacker; a dollar wasted is a traitor; a dollar saved is a patriot, doubly so when loaned to the Government.

A hoarded dollar represents idle power; a wasted dollar represents wasted power; a dollar saved represents power saved, labor saved, materials saved. Loaned to your Government, it represents power, labor, and materials in action, on the firing line, over the top. And more—it represents reserve power, energy stored, purchasing power conserved for its owner.

THE PENNSYLVANIA MEDICAL JOURNAL

Published Monthly Official Organ of the Medical Society of the State of Pennsylvania

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All communications should be addressed to the PENNSYLVANIA MEDICAL JOURNAL, Athens, Pa.

The Medical Society of the State of Pennsylvania does not assume responsibility for any statements or opinions published in this Journal.

ATHENS, PA., JUNE, 1918

HOTEL ACCOMMODATIONS FOR THE PHILADELPHIA SESSION

The Bellevue-Stratford will be the official headquarters during the Philadelphia Session, Sept. 23-26, 1918. The officers of the society will be located there. All scientific, social and business meetings, the Commercial Exhibit and the registration will be located on the second floor of this hotel.

Below is given a list of hotels and rates per day, European plan. Members should write to the hotels direct. On account of the crowded condition of the hotels we would suggest that in every case possible two persons should occupy one room.

	Rooms without Bath		Rooms with Bath	
	Single	Double	Single	Double
Adelphia, Chestnut and 13th Sts.			$3.00 up	$5.00 up
Aldine, Chestnut and 19th Sts.	$2.00 up	$3.00 up	3.00 up	4.00 up
American plan at Aldine, $3.00 per day per person additional.				
Bellevue-Stratford, Walnut and Broad Sts.	2.50 up		Court, 3.50 up	5.00 up
				Twin beds, 6.00 up
			Outside, 5.00 up	7.00 up
Colonnade, Chestnut and 15th Sts.	2.00 up	3.50 up	2.50 up	4.00 up
Continental, Chestnut and 9th Sts.	1.50 up	2.50 up	2.00 up	3.00 up
Green's, Chestnut and 8th Sts.	1.00 up	1.50 up	2.50 up	3.50 up
Hanover, Arch and 12th Sts.	1.00 up	2.00 up	2.00 up	3.00 up
Rittenhouse, Chestnut and 22d Sts.	2.00 up	3.00 up	2.50 up	3.50 up
Ritz-Carlton, Walnut and Broad Sts.			4.00 up	6.00 up
St. James, Walnut and 13th Sts.	2.00 up	3.00 up	3.00 up	4.00 up
The Little Hotel Wilmot, S. Penn Sq. (Hot and cold running water)	1.50	2.50		
Vendig, Filbert and 13th Sts.			Shower, 2.50 up	3.50 up
			Tub, 3.00 up	4.00 up
Walton, Locust and Broad Sts.	2.00 up	3.00 up	2.50 up	3.50 up

PENNSYLVANIA PHYSICIANS IN SERVICE

In our February issue there was given a list of Pennsylvania physicians who had "been recommended for commission in the Medical Officers Reserve Corps up to December 16, 1917." While much care was given to the preparation of the list, there were a few errors and omissions. An attempt was made to designate the rank of each officer, but promotions occurred during the two months necessary for securing the data and placing it in type. A few have failed to accept the commissions they applied for, but most of them have good reasons and cannot be called slackers.

We are reproducing this month a list of Pennsylvania physicians in the service taken from the Journal of the American Medical Association of June 1, 1918, which gives a complete list for all the states. It should be noted that the address given is the home address of the physician during the war, and that, therefore, he may not be credited to the county in which he practiced and in which he may hold membership in the county society.

Each physician physically qualified and under 55 years of age whose name does not appear in this list should seriously consider whether it be his privilege and his duty to apply for a commission in the Medical Reserve Corps or in the Navy. Medical colleges, hospitals, industrial plants and rural communities should not be deserted, but may not the Surgeon-General or the War Committee of the county society be better able than the physician himself to decide where he is most needed?

Medical men as a class are not wont to withhold their services for the want of financial remuneration, as is shown by the fact that many of our most prominent physicians and surgeons relinquished lucrative practices and went into the service early in the war, and before Congress had made some of the needed provisions necessary for the medical service. Today the compensation paid medical officers; the increased pay on foreign service; the commutation of quarters, heat and light; the provisions for insurance and for the care of dependents are such that a physician may enter the service without subjecting his dependents to serious financial hardship. A lieutenant receives $2,000; captain, $2,400; major, $3,000; plus 10 per cent. for foreign service. If quarters are not available as a place of abode for wife, child, or dependent parent, each commissioned officer will be paid commutation as follows: Lieutenant, $432; captain, $576; major, $720. (See "The Medical Officer's Outfit" on a previous page.)

The Surgeon-General should have a large Medical Reserve Corps from which to make assignments to active duty. At present there are but few more than two thousand unassigned members. In a certain week not long ago there were called into active service one hundred and fifty more physicians than were commissioned during the same week, not to mention the loss to the service of men discharged for various reasons.

The advantages afforded by the medical service are many. The special courses of preparation in the various departments of medicine and surgery present wonderful opportunities to the ambitious young man, and to the older practitioner as well, to keep abreast of modern improvements in diagnosis and treatment. It is said that the greatest postgraduate medical school in the country is being conducted at Fort Oglethorpe.

Preparations are being made to care for fifty thousand wounded men who may be returned to this country in the next few months. Three out of every five physicians in England have entered the service, and in France every medical man is subject to military orders. Our "preparedness" should provide that every available physician shall be commissioned and consequently ready for assignment when and where he is most needed and best fitted.

Much has been said about drafting physicians. Let every Pennsylvania physician under 55 years of age draft himself by applying for a commission, and then allow the constituted authorities to say where he can best serve.

STATE AND COUNTY SOCIETY WAR COMMITTEES

Acting on the request of the Surgeon-General and the suggestions of the War Committee of the American Medical Association and the Conference of State Secretaries held in Chicago on April 30, the proper authorities of the Medical Society of the State of Pennsylvania have appointed a War Committee consisting of Lieut. Chas. Scott Miller, M. R. C., Chairman, 515 City Hall, Philadelphia, and Drs. Walter F. Donaldson, Pittsburgh, and C. L. Stevens, Athens. The Surgeon-General in calling upon the medical organization for cooperation and assistance expressed the belief that through the organization "the additional increment to the Medical Reserve Corps can be most satisfactorily obtained and the necessary increment for replacements be secured without in any way depriving any community of physicians whose services are necessary to its welfare and without depriving any manufacturing or other concern of its medical personnel when such personnel cannot be spared."

The State War Committee realizes the magnitude, importance and difficulties of this undertaking and, complying with the suggestions made by the Conference of State Secretaries, is now asking for the appointment by each county society of a War Committee to assist in getting every available physician, regardless of college of graduation or society affiliation, to apply for a commission in the Medical Reserve Corps of the Army or the Navy. It is suggested that, where the County Committee of the Medical Section of the Council of National Defense has done satisfactory work, this committee be made the War Committee for that county. Such action will utilize efficient work already done. Where it appears desirable to appoint a new committee it is suggested that the committee be a small one and be composed of fairminded physicians who by reason of age, recognized physical disability or other reasons are not themselves qualified for a commission.

RECOGNITION OF PHARMACY

Practically every state of the Union has a law which provides that those who furnish drugs to the public shall be qualified for this professional work. In our Army the hospital steward who dispenses the medicines ordered by the physician for the sick soldier is detailed from the ranks without requirement of pharmaceutical training.

To remedy this defect and thus increase the efficiency of the Medical Department of the Army it is proposed to establish a Pharmaceutical Corps. As is the case with the Dental Corps, the Sanitary Corps and the Ambulance Corps, this corps is to be under the command of the Surgeon-General of the Army.

To provide for this recognition of pharmacy, Representative Edmonds of Pennsylvania last July introduced into the House of Representatives a bill to increase the efficiency of the Medical Department of the United States Army, to provide a Pharmaceutical Corps in that department, and to improve the status and efficiency of the pharmacists of the Army. The bill provides for the establishment of a Pharmaceutical Corps to be composed of a pharmacist director, with rank of major, five deputy pharmacist directors, with the rank of captain, and such number of pharmacists, with the rank of lieutenant, and of pharmacist apprentices, as may be needed for the service. The bill delegates to the Pharmaceutical Corps the following duties: To procure by purchase or manufacture all supplies of medicines, drugs, chemicals, pharmaceutical apparatus, and hospital and surgical dressings necessary for the Medical Department of the Army; to determine the quality and purity of such supplies; to have charge of the medical supply depots of the Army and the storage and safeguarding of such supplies; to provide for the issuance and distribution of such supplies and the dispensing of medicines in the various hospitals, dispensaries, infirmaries, trains and camps of the Army; to properly care for, regulate the dispensing and to systematically account for all spirituous liquors and habit-forming drugs purchased for the department; to procure by purchase or manufacture such drugs, chemicals, reagents, tests, and biologic products as are used in the laboratories and the medical and surgical practice of the department for the purpose of diagnosis, prophylaxis, or treatment; to account for all moneys received from sales of medical supplies, in accordance with the provisions of the Army regulations or disposed of by order of competent authority; to inspect the department's stores and supplies of drugs, medicines, hospital dressings, reagents, tests and biologic products and determine their deterioration and fitness for use; to cooperate with the other branches of the department in rendering first aid and wound dressing and in the making of diagnostic and chemical tests; to establish and maintain a systematic course of study and training, including the advances made in medicine, pharmacy, and sciences allied thereto, to be pursued by the members of the Army Pharmaceutical Corps who are seeking promotion in the Corps.

It goes without saying that the efficiency of the Medical Department will be increased if trained and experienced pharmacists purchase (or manufacture), test and dispense the drugs selected and prescribed by the medical men. Also, though the pharmacist is not trained to render medical aid nor, except in isolated instances, to do chemical or bacteriologic work, his familiarity with drugs should make him of considerable assistance "in rendering first aid in wound treatment and the making of diagnostic and chemical tests." The provision "to establish and maintain a systematic course of study," for those seeking promotion, follows the example set by the Army in establishing the Army Medical School, of the Navy in establishing the Naval Medical School and of the United States Public Health Service in providing courses of instruction to the men in the service and should do much to elevate the status of pharmacy.

Altogether the establishment of a Pharmaceutical Corps, through the enactment of the Edmonds bill or some similar measure, should make for greater efficiency in the Medical Department of the Army. Further, the commercial training of the pharmacist should also make for economy. Thus we feel confident that the director general of the Pharmaceutical Corps would strongly protest against the purchase of the proprietary acetanilid mixture "Ammonol," which was included among the medicines in the "List of Staple Medical and Surgical Supplies" selected by the Committee on Standardization appointed by the Council of National Defense.

THE CHICAGO SESSION

The Sixty-Ninth Annual Session of the American Medical Association, held in Chicago, June 10-14, was one of unusual interest and importance. It was evident from the first that the week was to have a War aspect never before experienced in medical gatherings—in America at least.

All the meetings of the Association and of other societies in session in the city were characterized by a spirit of patriotic ardor, and most of the scientific papers were of a special military nature.

The House of Delegates was well attended, even at the first meeting on Monday morning, and Pennsylvania was represented by her full quota of nine delegates, only one of whom was an alternate.

The opening general meeting in the Auditorium Theater on Tuesday evening was a most inspiring occasion—the large stage was occupied by the Fort Riley Military Band, which furnished music on all suitable occasions during the week; distinguished medical men from England, France, Canada and other countries of our Allies; ex-presidents of the Association, and some 300 officers of the Army and Navy. The Governor of Illinois, Hon. Frank O. Lowden, in his address of welcome, paid a glowing tribute to Surgeon-General Gorgas and other distinguished medical men and gave one of the best War talks ever delivered before an American audience. Dr. Charles H. Mayo, the retiring president, spoke of the work accomplished by the American medical men and of plans for a great post-graduate military medical school in Paris. President-Elect Arthur Dean Bevan gave a most inspiring address, which appears in *The Journal of the American Medical Association* for June 15, and which should be read in its entirety by every physician.

The registration was much larger than had been anticipated.

COUNTY SOCIETY HONOR ROLL

The following societies have forwarded 1918 receipts and *per capita* assessment for as many members as they paid for in 1917. The figures indicate the percentage of membership paid for as compared with 1917:

	Per Cent.
Carbon County	110
Lebanon County	110
Clarion County	109
Juniata County	109
Warren County	107
Union County	106
Elk County	105
Bradford County	104
Erie County	103
Wayne County	103
Berks County	102
Columbia County	102
Franklin County	102
Somerset County	102
Bucks County	101
Delaware County	101
Clearfield County	101
Chester County	100
Clinton County	100
Greene County	100
Snyder County	100
Sullivan County	100
Wyoming County	100

The societies of Crawford, Jefferson, Huntingdon, McKean and Potter counties have paid for all of their 1917 members who are now living in the respective counties, but not for as many as they had last year, some having died and others having been transferred.

PHILADELPHIA NEXT SEPTEMBER

The Committee on Scientific Work held its final meeting in Pittsburgh, May 14, with all its members present, and completed the program for the session in Philadelphia, September 24, 25 and 26. Some have feared that on account of so many of our members being in the service and others doing extra work on examining and advisory boards that there might be difficulty in arranging a scientific program equal to that of other years. On the contrary the committee found it necessary to decline several desirable papers that had been proffered and the program presented to our members next September will equal any we have ever had.

For the sake of variety, fraternity, and to best round out the program one or two men from outside the state have been asked by each section to accept a place on the program. The Section on Medicine has invited two men from Johns Hopkins Hospital, Dr. Louis V. Hamman, who will speak on Diagnosis of Pulmonary Tuberculosis by Physical Examination, and Dr. Herman O. Mosenthal, whose subject will be Essential Hypertension.

PAYMENT OF PER CAPITA ASSESSMENT

The *per capita* assessment for the year 1918 has been received from component county societies since April 1, as acknowledged on pages 531 and 532 of the May Journal, as follows:

1918				
4/ 1	Lancaster	133	6255	$ 2.75
	Westmoreland	105–106	6256–6257	5.50
	Somerset	41	6258	2.75
	Cambria	73–79, 96–98	6259–6268	27.50
	Cambria	80–95*	6269–6284	
	Philadelphia	1674–1677	6285–6288	
	Philadelphia	1678–1689*	6289–6300	
	Allegheny	986–1016, 1018–1022	6301–6336	99.00
5/ 1	Washington	91–92	6337–6338	5.50
	Northumberland	58	6339	2.75
	Chester	86	6340	2.75
	Delaware	88	6341	2.75
	Franklin	52	6342	2.75
	Butler	50	6343	2.75
	Westmoreland	107	6344	2.75
	Fayette	108–110, 112–117	6345–6353	24.75
	Fayette	111*	6354	
	Allegheny	1023, 1025–1026, 1028–1030	6355–6360	22.00
	Allegheny	1024, 1027*	6361–6362	
	Lackawanna	154–157	6363–6366	11.00
	Lackawanna	158*	6367	
	Cambria	99	6368	2.75
	Cambria	100*	6369	
	Snyder	16	6370	2.75
	Dauphin	136–138, 141–146	6371–6379	24.75
	Dauphin	140*	6380	
	Luzerne	195	6381	2.75
	Lawrence	51	6382	2.75
	Indiana	68	6383	2.75
	Bedford	22–23	6384–6385	5.50
	Northampton	120	6386	2.75
	Clarion	37	6387	2.75
	Center	23–25	6388–6390	8.25
	Luzerne	196	6391	2.75
	Lackawanna	159–160	6392–6393	5.50
	Elk	23	6394	2.75
	Cambria	101–102	6395–6396	5.50
	Bucks	84	6397	2.75
	Delaware	89	6398	
	Washington	93–94	6399–6400	5.50
	Dauphin	147–151	6401–6405	13.75
	Montgomery	133	6406	2.75
	Perry	17	6407	2.75
	Perry	18–20*	6408–6410	
	Indiana	69	6411	2.75
	Lycoming	97–100	6412–6415	11.00
	Tioga	32–33	6416–6417	5.50
	Allegheny	1031–1033, 1035	6418–6421	2.75
	Franklin	53	6422	2.75
	Montgomery	134	6423	2.75
	Indiana	70	6424	2.75
	Butler	51	6425	2.75
	Northampton	121–122	6426–6427	5.50
	Luzerne	197–198	6428–6429	5.50
	Beaver	62	6430	2.75
	Sullivan	9–10	6431–6432	5.50
	Westmoreland	108	6433	2.75
	Westmoreland	109–133, 135–140*	6434–6465	
	Dauphin	152	6466	2.75
	Venango	50	6467	5.50
	Venango	51*	6468	
	Bedford	24	6469	2.75
	Lackawanna	161*	6470	
	Lackawanna	162–165, 167–170, 173–176	6471–6482	33.00
	Armstrong	61	6483	2.75
	Beaver	63*	6484	
	Greene	20	6485	2.75
	Wayne	34	6486	2.75
	Washington	95–102	6487–6494	22.00
	Washington	103–104*	6495–6496	
	Lawrence	52	6497	2.75
	Cumberland	34–36	6498–6500	8.25
	Cumberland	37*	6501	
	Erie	119–120*	6502–6503	
	Cumberland	38	6504	2.75
	Northampton	123–124	6505–6506	5.50
	Bradford	40–45, 48–51	6507–6516	27.50
	Bradford	46–47*	6517–6518	
5/23	Westmoreland	141–145	6519–6523	13.75
	Franklin	54–55	6524–6525	5.50
	Lackawanna	177–181	6526–6530	13.75
	Northampton	125	6531	2.75
5/24	Sullivan	11	6532	2.75
	Somerset	42–43	6533–6534	5.50
	Venango	52–53	6535–6536	2.75
	Lawrence	53–54	6537–6538	5.50
	Philadelphia	1690–1694*	6539–6543	
5/25	Blair	87	6544	2.75
	Westmoreland	146–147	6545–6546	5.50
	Bucks	85	6547	2.75
	Philadelphia	1695–1701*	6548–6554	
	Fayette	102, 118	6555–6556	5.50
5/27	Fayette	119*	6557	
	Erie	115–118	6558–6561	11.00
	Beaver	64	6562	2.75
	Jefferson	57	6563	2.75
	Westmoreland	148	6564	2.75
5/29	Susquehanna	20	6565	2.75
	Lackawanna	182–183, 185–186	6566–6569	11.00
	Lackawanna	184*	6570	
	Northampton	126*	6571	
5/31	Cambria	103–104	6572–6573	5.50
	Philadelphia	1702–1716*	6574–6588	

STATE NEWS ITEMS

BORN

To Major and Mrs. E. J. G. Beardsley, Philadelphia, at Fort Oglethorpe, Ga., on May 27, 1918, a daughter.

DIED

Dr. Simon H. Gump (Univ. of Pennsylvania, '70) in Bedford, April 27, aged 71.

Dr. William Henry Ruch (Univ. of Pennsylvania, '73) in Ardmore, April 26, aged 65.

Dr. Thomas Hollingsworth Andrews (Jefferson Med. Coll., '64) in Philadelphia, May 8, aged 74.

Dr. Jane V. Myers (Pennsylvania Med. Coll., Philadelphia, '53) in Philadelphia, March 27, aged 87.

Dr. Thomas Kennedy (Coll. of Phys. and Surg., Keokuk, '74) in Bermudian, April 29, from paralysis, aged 79.

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* Dues remitted.

Dr. Robert J. Black (College of Phys. and Surg., Baltimore, '81) in McKeesport, April 27, from heart disease.

Dr. William O. Bunnell (Eclectic Med. Inst., Cincinnati, '94) in Wilkes-Barre, April 20, from pneumonia, aged 50.

Dr. Charles S. Phillips (Medico-Chirurgical Coll., Philadelphia, '95) in Reading, April 29, from cerebral hemorrhage, aged 73.

Dr. Burt Jacob Asper (Univ. of Maryland, Baltimore, '11), Chambersburg, was lost at sea when the U.S.S. Cyclops was sunk in April, aged 29.

ITEMS

Dr. Frederick H. Evans, Chester, is recovering from a severe attack of articular rheumatism.

Dr. Joseph P. Burke, Pittston, a lieutenant in the 102d Infantry, is a prisoner in Cillingen, Germany.

Surgeon Lindsay C. Whiteside, Lehighton, is one of the officers reported missing from the torpedoed American transport President Lincoln.

The Lackawanna County Medical Society gave a banquet on March 20 in honor of its former president, Dr. Daniel A. Webb, C.A.M.C.

Base Hospital Unit No. 20, University of Pennsylvania, Major John B. Carnett, director, arrived in England during the first week of May.

The Presbyterian Hospital, Philadelphia, receives $10,000 by will of the late Margaret L. Baugh of Chester, and the Episcopal Hospital receives $5,000.

Infantile Paralysis.—The state department of health received on May 6 the report of a case of infantile paralysis at Forest City, Susquehanna County.

Dr. Paul B. Stewart, Warren, who has been with the British expeditionary forces in France, was gassed on April 25, and is slowly recovering in a French hospital.

Major Richard Slee, M. R. C., U. S. Army, has been designated to command Camp Crane, Allentown, in place of Colonel E. E. Persons, who has been ordered to other duty.

Lieut. Clement A. Fogarty, M. R. C., Philadelphia, was severely wounded, April 18, while on active duty in France. His first active service was performed during the battle of Cambrai.

Dr. Judson Daland, Philadelphia, has been placed on active duty as consulting physician to the Fourth Naval District, which includes Philadelphia, with the rank of lieutenant-commander.

The Woman's Medical College of Pennsylvania held its sixty-sixth annual commencement, June 5. The address to the graduating class was delivered by Anna Howard Shaw, D.D., M.D.

Protecting Practice of Physicians.—During this year twenty-one members of the Lackawanna County Medical Society have turned over to thirty-three members absent in the service $843.44.

Dr. H. Augustus Wilson has resigned the chair of orthopedic surgery, and Dr. Henry W. Stelwagon the chair of dermatology in Jefferson Medical College, to take effect at the close of the present year.

Dr. Joseph Leidy, Philadelphia, has offered to be one of one hundred citizens to give $1,000 each to establish an endowment fund to maintain military training in the high schools of the city.

Dr. Maurice S. Redmond, Pittsburgh, is now a prisoner of war in Germany. Dr. Redmond enlisted in the Medical Officers' Reserve Corps at the time of the Mexican trouble, but was called to duty only last year soon after the declaration of war between this country and Germany. He left with the expeditionary force, and after landing in France was placed in the Cheshire Regiment of the British Army, as one of the medical officers.

Dr. John H. Stearns, Delaware Water Gap, who is somewhere in France, has been called on to mourn the sudden death of his only daughter, aged 17, during a long march in the interest of the Red Cross.

John Newton Hunsberger, Jr., son of Dr. J. Newton Hunsberger, Norristown, was one of eleven American ambulance men who won the war cross by gallant services performed during the battle on April 6.

Dr. James H. Fiscus, Boardman, Clearfield County, wrote to his friends last month that he had been "slightly" gassed and that he had been informed that he would be sent to southern France for a month to recuperate.

The Board of Directors of the Medical Club of Philadelphia has decided to omit the usual spring reception "on account of the unusual conditions now existing." They also decided to purchase a $1,000 Third Liberty Bond.

Drs. Luther M. Holloway, Salona, and Francis P. Ball, Lock Haven, were tendered a banquet by the Clinton County Medical Society on April 4, the former having completed fifty years of practice and the later having resumed practice.

Lieutenants Gouverneur H. Boyer, Pottsville, Harvey C. Updegrove, Easton, James B. Clinton and Baldwin L. Keyes, Philadelphia, are mentioned in recent press dispatches among twelve American physicians, as having received the British Military Cross.

Dr. S. J. Miller, Madera, on April 19, received word from the War Department that his son, Dr. Frank K. Miller, was reported among the missing. Dr. Miller went to France with American medical corps but had been transferred to the British Army.

Eye-Clinic Heads Held.—Drs. M. L. Leavitt, Morris L. Yubas and George W. Hale were recently held for court in bail of $400 each on the charge of failing to register their trade names with the Secretary of the Commonwealth at Harrisburg, and with the Prothonotary of the Court of Common Pleas of Philadelphia. Their establishments are on Walnut Street, Philadelphia, between Seventh and Eighth Streets.

Dr. Samuel D. Risley, who retires from public practice after forty-eight years of service, was, on May 1, tendered a dinner by the ophthalmologists of Philadalphia. A silver loving cup was presented to Dr. Risley, Dr. G. Oram Ring, presiding at the gathering, and Drs. E. E. Montgomery, C. K. Mills, H. F. Hansell, P. N. K. Schwenk, B. A. Randall, W. C. Posey and John B. Deaver, and ex-Governor Edwin S. Stuart being the speakers.

Obstetric Society Meeting.—The fiftieth anniversary of the Philadelphia County Obstetrical Society was celebrated, May 17. The progress of obstetrics was reviewed and the men eminent in this domain of medicine were pointed out. Photographs of the prominent pioneers of obstetrics and gynecology were shown and their achievements were outlined by various speakers. Addresses were made by Drs. Barton Cooke Hirst, president of the society; Edward E. Montgomery, C. E. Githens, George M. Boyd, Richard C. Norris, B. F. Baer and Edward E. Schumann.

Dr. James P. Hutchinson, in charge of the American Military and Red Cross Hospital No. 1 at Neuilly, has been honored with the French Cross for his hospital work in France. Dr. Hutchinson was a member of the staffs of the Pennsylvania and University Hospitals until he went to France in 1915 with the

University of Pennsylvania Hospital Unit, of which the late Dr. J. William White was the head. Since Dr. Hutchinson has been in France, reports have reached here telling of his brilliant work for the wounded soldiers. The Cross of the Legion of Honor was bestowed on him a few weeks ago.

Badges for Medical Students.—Medical students who have enrolled in the Medical Reserve Corps, subject to call at any time, have been given a badge to keep them from being looked upon as slackers. The badges are the same as the collar ornament worn by privates of the Medical Corps, a large dark brass button bearing only the Medical Corps insignia, the Æsculapian rod. They are to be worn at the buttonhole. Medical students in the reserve corps are subject to immediate call to the Army if they fail in any studies, and local medical colleges have received orders not to relax their standards in the least.

Public Health Day.—Wedneday, May 1, Public Health Day, was celebrated by a great public health meeting at the academy of music. Dr. William W. Keen presided and addresses were made by former President W. H. Taft, Dr. Alice Weld Tallant, Dr. James M. Anders and Dr. Wilmer Krusen, chief of the department of public health and charities. This meeting was under the auspices of the College of Physicians, the county medical society, the Child Federation, the Pennsylvania Society for the Prevention of Tuberculosis, the City Club, the board of education, the board of recreation and the city health department.

Tablet to a Physician.—In memory of Earl C. Peck, who died Sept. 5, 1916, from infantile paralysis contracted in the course of his duties at the outbreak of the epidemic, a tablet has been placed in the corridor of the administration building of the Philadelphia Municipal Hospital for Contagious Diseases. Dr. Peck was the first assistant physician in the scarlet fever ward of that institution, and on the appearance of infantile paralysis was assigned to the supervision of the department in which such cases were received. While engaged in the work, Dr. Peck contracted the disease. The tablet was erected from a fund raised by a number of friends.

Bequests to Philadelphia Hospitals.—By the will of the late George W. Endriss of Philadelphia bequests were made as follows: Lankenau Hospital and Samaritan Hospital, each $10,000; Episcopal Hospital and Hahnemann Hospital, each $5,000; Pennsylvania Hospital, Howard Hospital, Medico-Chirurgical Hospital, Polyclinic Hospital, Jefferson Hospital, University Hospital, Presbyterian Hospital, Frankford Hospital, Roosevelt Hospital, Saint Luke's Hospital, Kensington Hospital for Women, Rush Hospital for Consumption, Free Consumptives' Hospital, Philadelphia Cancer Hospital, American Oncologic Hospital, Jewish Hospital, Philadelphia Home for Incurables, each $1,000.—*Medical Record.*

How Pennsylvania Is Planning for Its Soldiers, Sailors and Marines Crippled in War Service.—Through the Bureau of Employment of the Pennsylvania Department of Labor and Industry at Harrisburg, 42,111 soldiers, sailors and marines, crippled or permanently disabled through war service may find in Pennsylvania suitable employment despite their various disabilities. More than one half of these openings are in skilled tasks that may be performed by disabled men having lost one or both legs, an arm, or handicapped by blindness in one eye, deafness, loss of speach, repulsive facial disfigurement, hernia, and general health impairment which would prevent heavy manual labor. Places of employment range from steel mills to dairies, from silk mills to railroads, from cigar factories to paper mills, and from lumber camps to department stores. The great number of employment opportunities for crippled war veterans are classified in the Bureau of Employment by industry, by locality, by occupation, and by disability of workers to be employed. This classification has been made possible by the patriotic responses of Pennsylvania employers to a questionnaire from the Department of Labor and Industry early this year. The national authorities are planning to equip each disabled soldier and sailor with every suitable appliance to bring his physical efficiency to a maximum and to give him suitable treatment and training to adapt him for tasks in industry he can most advantageously perform. From this classified employment list each Pennsylvania soldier, sailor and marine, disabled in war service, will be able to obtain from thousands of openings in his home state a task for which he is best suited physically, a task that will give him greatest financial return according to his capability and probably in the city or town where he most desires to reside.

GENERAL NEWS ITEMS

Pneumonia took 171 out of 285 deaths during the week ending April 12 among the troops in training.

Sir W. Arbuthnot Lane, Sir James Mackenzie and Colonel Herbert Bruce are now in the United States.

Deaths from Dental Disorders.—The Metropolitan Life Insurance Company states that fifty-two of the deaths of policy holders during 1917 were traceable to infections of the teeth.

Older Physicians for Dispensaries.—New York is following the example of Boston by asking the older physicians to volunteer for dispensary work to replace the withdrawals for military service.

The American Public Health Association will hold its next meeting in Chicago, from October 14 to 17, inclusive. The principal topic of the meeting will be "The Health of the Civil Population in War Time."

Dr. Carrel's Hospital Destroyed.—The hospital established near the front by Dr. Alexis Carrel of the Rockefeller Institute was persistently bombed by German aviators until it was necessary to remove it to the suburbs of Paris. The wounded were successfully removed but two doctors were slightly injured.

The American Laryngological Association at its meeting in Atlantic City, May 29, elected the following officers: President, Cornelius G. Coakley, New York; vice presidents, George E. Shambaugh, Chicago, and John R. Winslow, Baltimore; secretary, D. Bryson Delavan, New York; treasurer, J. Payson Clark, Boston; councilors, Alexander W. McCoy, Philadelphia, Thomas R. French, Brooklyn, Joseph Goodale, Boston, Thomas H. Halstead, Syracuse.

Association of American Physicians.—At the recent meeting of the Association of American Physicians, May 7 to 11, the following officers and new members were elected: officers for 1918-1919: president, Dr. Alexander McPhedran, Toronto, Ont.; vice president, Dr. Hermann M. Biggs, New York; secretary, Dr. Thomas McCrae, Philadelphia; recorder, Dr. William W. Ford, Baltimore; treasurer, Dr. Joseph A. Capps, Chicago; councilors, Dr. Theobald Smith, Princeton, N. J., and Dr. Charles F. Martin, Montreal, Que. The 1919 meeting will be held in Atlantic City during May.

STANDARDS FOR CONDIMENTS.—Definitions and standards for 50 condiments are contained in Service and Regulatory Announcement No. 22, Bureau of Chemistry. The publication also states the position the department will take with regard to baking powder, "water-ground" corn meal, canned "red beans," canned crawfish, prepared mustard, sorghum and molasses, figs, use of "mineral oil" as slab dressing in candy manufacture, and "blood orange" flavoring. Copies may be obtained upon application to the Division of Publications, United States Department of Agriculture, Washington, D. C.

COUNCIL ON PHARMACY AND CHEMISTRY.—Since last report the following articles have been accepted for inclusion in New and Nonofficial Remedies: Barium sulphate-Brady for Roentgen-Ray work, George W. Brady and Co.; chlorine-soda ampoules, Johnson and Johnson; antipneumococcic serum, type 1, Lederle Antitoxin Laboratories; chlorcosane-Monsanto, Monsanto Chemical Works; acid. phenylcinch.-Morgenstern, acid. phenylcinch.-Morgenstern tablets, sodium phenylcinch. water-Morgenstern, Morgenstern and Co.; antipneumococcic serum, type 1, Parke, Davis and Company; procaine-Rector, Rector Chemical Company, Inc.; antipneumococcic serum, type 1, E. R. Squibb and Sons.

PERSONNEL OF THE MEDICAL DEPARTMENT.—For the week ending May, 1918, the personnel of the Medical Department of the Army included:

MEDICAL CORPS: 868, including 1 major-general, 65 colonels, 110 lieutenant-colonels, 298 majors and 394 lieutenants.

MEDICAL RESERVE CORPS: 19,226, including 1,388 majors, 4,983 captains and 12,855 lieutenants. On active duty: 17,343, including 1,320 majors, 4,727 captains and 11,296 lieutenants.

MEDICAL CORPS, NATIONAL GUARD: 1,199, including 18 lieutenant-colonels, 249 majors, 150 captains and 782 lieutenants.

MEDICAL CORPS, NATIONAL ARMY: 151, including 5 brigadier-generals, 16 colonels, 122 lieutenant-colonels and 8 majors.

The discharges to date are:

	Number	
Causes	M.R.C.	M.C.N.G.
Physical disability	670	52
Inaptitude	262	20
Other branches of service	209	72
Resignations	132	33
Domestic troubles	59	0
Needed by community	50	0
Deaths	80	5
Dismissals	10	3
Duty completed	1	0
No reasons given	14	0
	1,767	185

"SECTS" NOT FOR MEDICAL SERVICE.—According to the *Army and Navy Register,* the Surgeon-General of the Army is opposed to legislation admitting osteopaths and other sects to the personnel of the Medical Corps. It quotes the following memorandum sent by Surgeon-General Gorgas to the Adjutant-General of the Army:

The time has long passed for exclusive adherence to any particular school of medical doctrine or practice, such as is implied by the degree of doctor of osteopathy, of chiropractic, of naturopathy, of mechanotherapy, of eclectic medicine, or any other "pathy." The terms "allopathy," "old school," etc., are equally objectionable. A scientifically educated physician is at liberty, and it is his duty, to employ any method of treatment whatever which he believes will benefit his patient. Homeopathic physicians have the degree of doctor of medicine, and some of their schools furnish an adequate medical education. They have for the most part abandoned their exclusive dogmas; as a class they are rapidly declining in numbers and are being merged in the general profession of medicine. They are eligible to qualify for the Medical Corps of the Army. While practice based on the peculiar tenets of osteopathy may be beneficial in suitable cases, the same or similar methods are open to the use of any physician. Osteopathic procedures applied to cases unsuited for them, as has often been done, result in serious harm. The only safeguard against such adherence to exclusive systems is a good medical education, such as is now demanded for admission to the Medical Corps.

It would be almost objectionable to recognize any sort of medical practitioners in the Medical Department of the Army, be it osteopathic, allopathic, eclectic, chiropractic, or any other of the countless sects. Members of the regular profession of medicine, who now enter the Medical Corps, are merely educated physicians and do not constitute a sect in medicine, allopathic or otherwise. They are merely physicians free to follow any method of treatment which they may deem beneficial, in the same sense that a chemist is a chemist and a physician is a physician. It is argued that osteopathic physicians are trained in the principles of scientific medicine and are as well qualified as any physician to practice all branches of the profession. I have already indicated that, in my judgment, this is not true, but, if it were conceded, then the epithet "osteopathic," which sets these practitioners apart as a separate class or sect, could have no significance or value other than a commercial one, and this is not a principle which should be sanctioned in the constitution of the Medical Corps of the Army. . . . Whatever argument can be argued for the admission of osteopaths would apply equally to chiropractics and other medical sects. All cure their patients in certain cases; all do more harm than good when the balance between benefit and injury is struck.

The judge advocate general has advised the Secretary of War to the effect that, while the law does not specifically provide that a physician, in order to enter the Medical Corps, must be a doctor of medicine, unwritten practice does, and the secretary has decided in accordance with this opinion that he will require that a man coming into the medical corps shall have the degree of M.D. I hope that this decision, which is in accord with all previous practice, will be maintained, and that the degree of D.O. will not be recognized as an equivalent, as is desired by the osteopathic physicians.

The admission of osteopathic physicians as such and without the degree of doctor of medicine to the Medical Corps would have the practically unanimous opposition of the medical profession of this country and of all allied countries, would be regarded, and justly so, as lowering the standards, educational and professional, of our Medical Corps, and would have a discouraging and detrimental effect on efforts to secure physicians for the corps both now and in the future, and on the general morale of the corps.

BULLETIN EXCERPTS

MEDICAL MONTHLY, BUCKS

YOU AND YOUR

Do *you* ever think this medical society is as much for *you* as for any other member?

Do *you* ever think *you* fail in *your* duty to it when *you* are absent from its meetings, time and time again —or never there?

Do *you* know it is impossible for you to frame a sensible excuse for *your* absence and lack of interest in the welfare of *your* society?

Do *you* know that much of the true increase of *your* medical progress depends on *your* actual contact with the members of *your* society?

Do *you* know that many of *your* fellow members are head and shoulders above *you* because they learn from others whom *you* think inferior to *you,* and that *your* egotism is born of conceit, not knowledge?

Do *you* know that the keen, wide-awake and really busy doctors are the ones who attend regularly their society and are active workers?

Do *you* ever think it is laziness, indifference or selfishness that keeps *you* from the activities and benefits of *your* society?

Do *you* ever think if things should go wrong in the way that *your* help must come from *your* society *you* would think *you* did not deserve the help it must give *you* to save *you* financially and professionally?

Do *you* ever think if *you* were out of the society, and being a drone, *you* might not get in again?

Do *you* know there is more real good in *you* than *you* are given credit for by others, and much of the light in *you* is hidden beneath *your* bushel?

Do *you* know *your* society would be a better one if *you* actively worked for it, and that *your* absence stunts *you* and it?

Do *you* know that "slackers," converted, frequently make the best kind of workers, and it is hoped such may be our experience with *you,* but if *you* do not prove this kind, then the best thing for *you* to do is to "jump in a hole and pull the hole in after you."

The Man He Is

Of all who rank among earth's noblest sons
The good physician pays the highest toll,
In painful watchings, in stern self-control,
In sudden calls that weary nature shuns.
He hath his pauses and his Rubicons,
And storms peculiar o're his pathway roll;
A warrior brave, the tremors of his soul
O'erpass the deepest thunder of the guns.

He fights great battles in the silences,
Self-poised yet self-effacing; firm but kind,
He keeps his heart serene, but ever young.
A life unknown to the crowd is his;
A life of service, body, soul and mind;
A life of deeds heroic—but unsung!—*R. O.*

COMMUNICATION

SCARCITY OF NURSES

Hamburg, June 4, 1918.

To the Editor: A few days before his death, Dr. Dixon made the provisional appointment of Dr. Caroline Marsh Wikel as resident physician at the Hamburg State Sanatorium. After serving two months, Dr. Marsh decided that she would like to continue as a permanent member of the staff. Acting on the recommendation of the medical director, the appointment was made regular by Dr. Franklin Royer, acting commissioner of health. Dr. Marsh has had wide experience, having practiced medicine in New Jersey, Florida and Cuba. She is a graduate of the Woman's Medical College of Philadelphia.

I can very strongly support the communication and editorial which appeared a few weeks ago in the *Public Ledger* of Philadelphia, concerning shortage of nurses in institutions. Our staff has become depleted through resignations caused by sickness, entry into the U. S. Army Hospital service and other good reasons. It has been impossible to obtain new nurses. The Department has recently increased the salary from $50 to $55 with maintenance. The need of our troops in France is unquestionably very great, but we believe that nurses should have strongly brought home to them the fact that if we are to win the great war, our invalids at home must be taken care of also.

Yours very truly,
Thomas A. Stiles, Medical Director.

BOOK REVIEWS

THE WAY OUT OF THE WAR. Notes on the Biology of the Subject. By Robert T. Morris, F.A.C.S., Author of "Tomorrow's Topics Series." Garden City, N. Y.: Doubleday, Page and Company. 1918. Price $1.00 net.

The intimate conversational plane of this little volume races one along from one point to the next in a discussion of the theory that war is caused by man's defective brain, and that, the sociologist and the psychologist both having failed in their efforts to get at the true source of the matter, it is a work for the biologist. L. F. P.

THE SURGICAL CLINICS OF CHICAGO. Volume II, No. 1 (February, 1918). 8vo, pages 226. Philadelphia and London: W. B. Saunders Company.

The Saunders Company, prior to the death of Dr. John B. Murphy of Chicago, supplied practical instruction in clinical surgery to the medical profession by publishing volumes containing the lectures given at Mercy Hospital by that original surgeon. Later the same publishers enlarged the scope of their clinical manuals by issuing The Medical Clinics of Chicago, in which many well-known internists of that city were represented. Since the death of Dr. Murphy, a further development of the idea has occurred; and there have appeared surgical volumes of clinical lectures on surgery delivered by teachers in Philadelphia, Baltimore and other medical centers.

The present Chicago number contains contributions from sixteen surgeons and one internist. The topics vary from gunshot wounds of the head to club foot, from duodenal ulcer to ulcer of the leg, from fractures to arthroplasty, from extrauterine pregnancy to local anesthesia, from meningeal cysts to stricture of the rectum. It is exceedingly well illustrated. The contributors include those of most distinguished name and younger, though rising, surgeons of that active surgical center on Lake Michigan.

It must require an editor with a wise and active "blue pencil" to excise the repetitions and inadvertences of the operative arenas of men of such varying caliber.

Philadelphia may feel proud that a collection of such volumes as this comes from one of its medical publishing houses. They fill a space in current surgical literature that was not so closely occupied by the International Clinics, of another Philadelphia publishing company, as to forbid friendly rivalry. Such evidences of Philadelphia energy in medical scientific literature should stimulate the surgeons and internists of the City of Brotherly Love to renewed activity in research work and medical teaching.

The volume just described is worthy of a more permanent binding than the paper cover which scarcely protects it from the wear and tear of handling. J. B. R.

SEASONABLE

Swat the fly, shoot the spy, cut out the lie, swear off on pie, quit drinking rye, and never say die.—Fort Wayne *News.*

SOCIETIES

PHILADELPHIA LARYNGOLOGICAL SOCIETY

Meeting, March 6, 1918, at which a Symposium on Diphtheria was presented.

The Bacteriology, Immunology and Serology. Dr. John A. Kolmer stated that the most important consideration at the present time, brought about by the present war, was the diphtheria carrier. Bacteriologically and therefore theoretically, every case of diphtheria, must show the diphtheria bacillus, but this is not always present. It is not found in from 10 to 20 per cent. of cases, one of the reasons being that the organisms are deep-growing and the culture will not give a positive finding. To aid in the prevention of the spread of diphtheria, two facts should be remembered; namely, that there are different types of bacilli and, secondly, that certain types are more virulent than others. The guinea-pig test was mentioned as a very reliable way in differentiating the virulent from the nonvirulent bacilli, a negative test being the safest test for the nonvirulence of the culture. At present there is no treatment for the removal of the diphtheria carrier bacilli except tonsillectomy.

Dr. Kolmer urged large initial doses of antitoxin for the neutralization of the toxin in the blood and the oncoming toxin. He favors, first, the intravenous method and secondly, the intramuscular method of administration. Relative to the immunology, the following summary may be given About 40 per cent. of people carry about one unit of normal antitoxin (probably hereditary), this being natural immunity. The Schick test when properly conducted is a reliable clinical test or index of immunity. It is used quite freely in the U. S. Army. At the present time a negative Schick test means five years of immunity as it has been about five years since the test was first carried out. Concerning active immunity, only 20 to 30 per cent. of people have been able to give negative Schick test which would mean that they are producers of antitoxin.

Diagnosis and Treatment. Dr. S. S. Woody: The important features brought out are: a typical false membrane which may be of any color, the commonest location being unilateral, on the fauces, larynx and nasopharynx. An isolated patch on the pharynx is rarely diphtheritic. Pain is slight and the temperature may be low but a high fever may not be incompatible. The cardinal symptoms of laryngeal diphtheria are croupy cough, impaired voice and increasing dyspnea. Nasal diphtheria in many cases manifests itself solely by a discharge from the nose and at first without systemic disturbance.

Every doubtful case should be treated as for diphtheria; if the culture is positive well and good and if not, no harm has been done. The other germs which may cause an exudate are the staphylococci, streptococci and pneumococci. The conditions to be differentiated are follicular tonsillitis, Vincent's angina (the exudate here is ulcero-membranous), quinsy, thrush, herpes and the angina of scarlet fever. Laryngitis of measles is often confused with diphtheria, the two diseases, however, may coexist and it is well known that patients with measles are prone to diphtheria. Other conditions confused with laryngeal diphtheria are laryngismus stridulus, edema of the glottis, tuberculosis, lues, retropharyngeal abscess, etc.

The treatment would be very simple for all cases seen within the first twenty-four hours, namely, antitoxin and rest. Dr. Woody prefers the intramuscular method for the administration of the antitoxin. The dosage depends on the site of the disease, the age of the patient and his general condition and on the day of the disease the antitoxin is given. As to the total amount to be given or to be permitted, Dr. Woody reports that 300,000 units were given subcutaneously in a case with recovery. In 1,000 cases 40 per cent. gave evidence of serum sickness. Collapse and death have been reported but of such rarity that it should not really be considered. Dr. Woody then covered quite fully the general hygienic and medical treatment.

Particular mention was made in the treatment for laryngeal diphtheria: A canopy and croup kettle for the production of steam with the patient's head in the direct path will very often give relief from dyspnea. The application of turpentine stupes to the neck and upper chest is often of decided advantage. Rubbing of the larynx and upper chest with camphorated oil and subsequently covered with hot flannel is another means for relief. The indication for operative interference are well-marked dyspnea, with recession of the soft parts of the chest, restlessness and a weak rapid pulse, especially if these symptoms do not show signs of abatement after serum and other measures have been administered. The complications mentioned are: cardiac failure, paralyses and bronchopneumonia.

Municipal Management and Research. Dr. Clarence W. Schaeffer discussed his paper from six points of view: (1) The source of contagion and modes of transmission; (2) age susceptibility; (3) the day of illness on which the case is reported to the health department; (4) the promptitude in which the physician reports the case; (5) mild cases of diphtheria and bacillus carriers; (6) isolation and nursing.

During 1917, of the 3,141 cases reported, the source of contagion was established in 35 per cent. The largest single factor is "secondary house cases." These are due usually to preventable causes, the principal ones of which are improper isolation and lack of immunization. Schools, neighbors and friends are other sources of contagion. As to age susceptibility, there are three classes, namely, those under school age, numbering about 59 per cent.; those of attending school age, forming 34 per cent., and those over school age, making about 7 per cent. An early report of the case of diphtheria to the health department means earlier disposal of this case as a spreader of infection. It is during the interval between the development of the disease and the day of notification that is the dangerous period and most of the damage is done. An earlier summoning of the physician by the laymen for sore throats and colds generally will help considerably. Doctors are apt to be forgetful and carry the postcard around in their pocket before dropping it into a box, to report contagious diseases. By this means many foci of infection would be closed up promptly. Mild cases and bacillus carriers play a large rôle in the spreading of the infection. Many investigators have found that the number of bacillus carriers is higher in members of a family which have been exposed to the disease than in the average family, and the percentage is still higher where no isolation is practiced, than in those where proper precautions were taken. There were 94 cases during 1917, giving a history of a slight sore throat or slight discharging nose, in which a positive diphtheria culture was obtained on bacteriological examination. The best isolation is the removal of every case to contagious hospitals. That we are approaching this goal is shown by the fact that each year shows an increased proportion of cases going to the hospital and during 1916 reached 71.5 per cent. During the last year there were 642 cases more than in the previous year and is the largest number reported since 1911. The deaths numbered 441, giving a death rate of 14 per cent. The morbidity per 100,000 numbered 181 in 1917, while during 1916, it was 146. The mortality rate per 100,000 was 25.4 as compared to 22.6 during 1916. This condition is not peculiar to Philadelphia, as the disease has been more prevalent throughout the country, this undoubtedly due to the life, necessary of many, under conditions of wartime.

Meeting April 3, 1918

Bilateral Acute Otitis Media. Dr. Otis D. Stickney reported a case with symptoms of sinus thrombosis. Mrs. F. K., aged 52. Both tympanic membranes were incised followed by free drainage, pain in the tip of the left mastoid and the temperature hovering about 102 F. Pain in various joints developed followed by pain in the extremities. On the onset of the chills supported by the profuse discharge from both ears and swellings in the region of the right elbow and left ankle a bilateral mastoid operation was performed with the exposure of both lateral sinuses. Both mastoids were found more or less necrotic and filled with pus. The sinus walls appeared normal and were not incised; aspiration with a hypodermic needle withdrew some blood which proved negative to culture. Incision later of the right elbow liberated an ounce of pus, culture of which proved to be streptococcic. The latter germ was also found in the discharge from the ears.

A marked chill and urticaria followed the use of 50 c.c. of antistreptococcic serum intravenously. This was followed a few days later by slight chills and the general condition was worse. Later several distinct chills and a rise of temperature to 104 F. followed. Pain in back of the head and down the spine with slight flushing of the right cheek compared with the left and other minor symptoms made the case appear as sinus thrombosis. The right mastoid was reopened and the right lateral sinus incised. No thrombus was found. With the thought that a partial thrombus in the right jugular bulb, the right internal jugular vein was exposed and its branches ligated and a portion of it resected. The left lateral sinus was exposed and incised followed by profuse hemorrhage, quickly controlled by introducing a small tightly rolled pad of iodoform gauze, above and below, between the inner table of the skull and the dural wall of the sinus. No signs of intracranial pressure resulted. There was decided drop in temperature and signs of general improvement, and complete recovery.

Syphilis of the Internal Ear and Eighth Nerve. Dr. George W. Mackenzie read a paper; some of the important features brought out were: Its early manifestation in deafness in children, congenital mutism, 60 per cent. of nerve deafness in children giving a positive Wassermann reaction. Luetic nerve deafness is usually bilateral. In the acquired types the abruptness and rapidity of deafness is an important feature. In the congenital type it begins about the sixth to the tenth year and is gradual in its onset.

Some of the symptoms are impaired hearing appearing suddenly; its bilateral affection; the appearance of vestibular and semicircular canal symptoms as vertigo, nystagmus, etc. Another factor brought out is that complications following suppurative otitis media are more apt to occur than in nonluetics. The course of involvement is meninges, nerve followed by inner ear affection.

Bipolar (Oudine and D'Arsonval) Currents to Remove Occlusion of Cavities. Dr. A. B. Hirsh, in the absence of Dr. S. St. John of Akron, Ohio, read a paper on this subject. A demonstration of the instruments used followed.

H. B. Cohen, Reporter.

PITTSBURGH ACADEMY OF MEDICINE

Meeting of February 26

Conservative Surgery of the Seminal Vesicles. Dr. Theodore Baker: Seminal vesiculitis is practically always associated with prostatitis, although the latter may exist without the former. The etiology of the two affections may be traced either to a direct infection of the lower urinary tract, or be of a hematogenous character. The former is the most frequent, and is usually due to the extension backward of a gonorrheal infection of the urethra. In fully 90 per cent. of untreated Neisser infection the posterior urethra and the prostate gland and seminal vesicles are involved, and in at least 10 per cent. of these epididymitis develops. The lower urinary tract is also frequently infected by the urine from infected kidneys, and with this type of urethral infection prostatitis and vesiculitis are also common. The causative organisms are mostly those seen in the ordinary pyurias, including *Bacilli coli, staphylococci, Bacteria acidi lactici, aërogenes* and in not a few the *Micrococcus catarrhalis.* Hematogenous infection of the prostate and vesicles is common, but not yet fully recognized. The original focus may be in the teeth, tonsils, furuncles and infections of the intestinal tract. These terse introductory remarks are made to emphasize the fact that not all cases of prostatitis and vesiculitis are due to gonorrhea; my personal records show about 20 per cent. of cases with no gonorrheal history whatever, and in which no gonococci were ever to be found. On the other hand it is common enough to find prostatitis and vesiculitis kept up by secondary invaders long after the gonococci have disappeared.

Seminal vesiculitis and prostatitis are of as much interest to the internist as to the surgeon, because of the remote symptoms and effects. The most common of these are in order of frequency: Referred pains in the lower back, rectum, suprapubic region, and renal areas. In not a few cases the pain is such as closely to simulate and be mistaken for renal colic, lumbago, sacro-iliac disease, and sciatica. Abdominal pain simulating appendicitis has been noted a number of times. Vesical tenesmus with the diagnosis of cystitis is common and the treatment of the patient opposite to what he needs. Prostatitis without enlarged prostate is commonly caused by the same condition. Arthritis is a well-known result, not alone of the gonorrheal infections but of the other common infections of the vesicles and prostate. Sexual weakness and impotence are very frequent sequelæ.

Indications for surgical interference are limited to certain definite cases, and in these cases the indications are practically imperative: First, those cases of arthritis where the etiology seems definitely clear as being due to infection in the vesicles; second, that group of cases of chronic gleet and recurring attacks of epididymitis following Neisser infection, and other infections excepting tuberculosis. It is safe to say that of all cases of chronic gonorrhea which means chronic prostatitis and vesiculitis, not over 50 per cent. of the patients are cured by the usual methods, and then only after several months to over a year of careful treatment, and cooperation on the patient's side. Of the remaining 50 per cent. a large number get along in comfort, unwilling to believe that they have any infection until during the lapse of years nature effects a cure. Then there is the large number, the unfortunate ones who continue to suffer mentally as well as physically, and whose lives are practically burdens. These patients are food for the quacks. They continue to have discharge, recurring attacks of epididymitis, and urinary symptoms. They are also dangerous to the community in that they are the cause of infection in others. From my limited experience I have based the indications for surgical interference, therefore, first, on the presence of recurring epididymitis, or in fact a primary attack, in which there is always a vesiculitis on the corresponding side; second, chronic pyuria with palpable vesicles or vesicle containing pus in the secretion, which does not respond in a reasonable time to the ordinary treatment; lastly, all cases of arthritis associated with genital infection. Choice of operation: The seminal vesicles may be attacked from two directions. They may be directly opened and drained by a radical operation as suggested by Fuller and later by Squeier, a method proved of great value; or they may be attacked indirectly by way of the vas deferens, by the technic originally suggested and performed since 1904 by Belfield. I believe that conservative surgery which will yield results that compare favorably to those obtained by radical operation is to be preferred at first.

I believe that the operation of choice is that of vasotomy and irrigation of the seminal vesicles through the vas, as suggested at first by Belfield. It consists of exposure of the vas through a small incision over the cord just below the external abdominal ring, liberation of the vas from the cord, injection of the vesicles with argyrol or collargol. The solution completely fills the vesicles, reaching every sacculation and compartment, and after being filled the roentgenogram will show the organs very well. The operation is slightly modified by some, who do not open the vas but inject the medicine directly into it as into a vein. This is a difficult and uncertain method, and I do not believe that it will produce the same results as the former method. One injection of the vesicle is probably sufficient, for the solution will remain there for from twenty-four to forty-eight hours, long enough to have an antiseptic action, but I prefer when possible to fill the vesicle the second time, twenty-four or thirty-six hours after the first injection. The advantages of the operation are its simplicity; it is performed with local anesthesia entirely, and is painless. It does not require the patient to be in bed longer than four days, three usually, and he can be at ordinary work in one week. Finally, the results are very good.

The only table of results which I have been able to obtain are those of Squeier and Thomas. Squeier performed the radical operation fifty times with the following results: 61.9 per cent., cured; 23.8 per cent., improved; 14.3 per cent., unimproved. Thomas, in vasotomy and vas puncture reported the vas not opened and vesicle injected once; in a total of twenty-nine cases, twelve were cured, fourteen improved, three unimproved. He had about 42 per cent. cured. My own cases total seventeen, with 63 per cent. cured, 18.5 per cent. improved, 18.5 per cent. unimproved.

Dr. Moyer, in discussing: How frequently are multiple arthritic infections a complication of seminal vesiculitis, and how frequently are they improved by treatment of seminal vesiculitis?

Dr. Singley: Most physicians think of the nose, throat, sinuses and teeth in arthritic infections and forget the seminal vesicles as the possible focus.

Dr. Foster asked if Fuller several years ago did not regard the vesicles as a focus of infection long before the teeth were regarded as such.

Dr. Baker, closing: I am unable to give the percentage of multiple arthritic infections complicated with seminal vesiculitis. They are almost always improved by treatment of seminal vesiculitis. Several years ago Fuller massaged the prostate gland for arthritis but he now uses the radical operation.

Anesthetic in a Tonsil Operation. Dr. B. M. Dickinson: The choice and manner of handling the anesthetic is of prime importance in all operations on the throat. A clumsy operator can bring to grief the best anesthetist since the days of Allis, and no operator is at his best with a poor anesthetist. When it comes to the choice of an anesthetic the first thing to decide is whether it shall be a local or a general anesthetic. In a case of children the use of general anesthetic is practically universal. The profession has practically agreed that ether is the general anesthetic of choice though special cases may make us turn to chloroform, and when carefully used it is highly satisfactory. The indications for chloroform are especially nephritis and bronchitis. Nitrous oxid is used in this class of cases with great satisfaction when its peculiarities are fully understood. Personally I do not like it because the blood is so black it is impossible to see well.

In the case of adults the choice is not so easy. Operators are immediately found in two camps, those who habitually use some form of local anesthesia and those who habitually use ether. Personally I enroll myself with the latter. I can count the tonsil operations I have done under local anesthesia during the past five years, at an even score. They have been cases of endocarditis with poor compensation, myocarditis, bronchitis, diabetes, hyperthyroidism or stubbornness. I have had cause to regret that I used a general anesthetic in about the above number of patients. In my local anesthetic cases I have used cocain crystals painted over the tonsil and surrounding tissues and 2 per cent. novocain by injection at three or four points in the neighborhood of the nerves supplying the tonsil. This combination has been highly satisfactory but does not give complete relief from pain in my hands.

In using local anesthesia gentleness, encouragement and an occasional short rest are helpful. A hypodermic of morphin and atropin a half hour before operation is essential. But even with a carefully and properly applied anesthetic, a confident and courageous patient under the soothing influence of morphin, and exceptional gentleness and deliberation on the part of the operator the technical difficulties of the operator are much greater than under a general anesthetic.

Final results with local anesthesia have been highly satisfactory in my hands, due to careful selection rather than *finesse* in handling. In fact it must be admitted the patient is in command whenever local anesthesia is used. He can fiddle round and cough and expectorate, till one's patience is exhausted and everything spattered with blood; and finally he can "show yellow" and quit with the operation incomplete. This and the sheer brutality of the operation are my objections to local anesthesia.

Now with a general anesthetic the operator is in control and, speaking generally, one case is like another. A standard of technic is therefore more easily possible, and more uniformly good work can be done. It may be objected that the surgeon's responsibility is greater with a general anesthetic; but this is not really true, since statistics will show as many fatal cases, proportionally, in the use of local as of ether anesthesia.

Some allusion has already been made to the absolute contraindications to the use of ether in throat work and in a general way they are the contraindications to the use of ether anywhere. There are several relative contraindications to the use of ether in operations through the open mouth. I regard with suspicion (*a*) alcoholics, (*b*) the obese, especially those who have recently become so, (*c*) neurotics, (*d*) former athletes, (*e*) patients with short, thick neck, (*f*) or large tongue, (*g*) or misshaped flexible epiglottis, (*h*) or with backwardly directed laryngeal opening, (*i*) or undershot lower jaw.

In a recent case in which the patient stopped breathing we intubated, using a long rigid metal tube, in fact a No. 22 prostatic catheter, through which compressed air was carried to the lungs. The operation was continued and completed without the slightest difficulty with the tube in position. I am having made a more convenient tube and will show it when finished. Of course it amounts to nothing more than a modified intratracheal anesthesia. But we must not forget that to use a thing of this nature the mouth must be opened; and let me now submit that every kit for operating through the open mouth should have an efficient screw or wedge gag. The time lost in getting the mouth open, otherwise, may be decisive.

The use of an ether vaporizing apparatus in combination with compressed air is practically universal among specialists and it should commend itself to the general surgeon when he has occasion to operate through the open mouth. Such an apparatus in the hands of a careful and alert anesthetist is highly satisfactory; a combination which in twelve years has yielded me only five cases of pneumonia and no fatality.

Dr. McCready, in discussing: I believe ether to be the anesthetic of choice in children. The question of local or a general anesthetic in adults is open to debate; under normal conditions, I believe local anesthetic is the one of choice. Much depends on the speed of the operator and the difficulties in the case. A slow operator should not use local anesthetic and in a long difficult case it should not be used. I believe that postoperative hemorrhage is more under local anesthesia. If adrenalin is used at time of operation in conjunction with anesthetic there is less hemorrhage at the time of operation but more afterwards.

Dr. Dickinson, in closing, said there should be no postoperative hemorrhage if the vessels are all ligated.

Meeting of March 5

Nonoperative Treatment of Pelvic Inflammation.

Dr. S. A. Chalfant: Before considering the present-day treatment, it was interesting to notice the treatment advocated in some of the textbooks of twenty years ago. At that time, very active treatment by means of intra-uterine applications of antiseptics, hot vaginal douches and purgation was advocated. About 1901, Ochsner advocated his expectant plan of treatment in late appendix cases. Although a similar plan had been in use in many clinics for the care of pelvic inflammation cases, his writings had much to do with systematizing and standardizing this work. But to no other man do we owe as much in this work as to one of our ex-presidents, Dr. Simpson, for the careful, concise and systematic way in which he has presented this subject in his two papers, 1909 and 1915, before the Gynecological Society.

On admission of an acute case, either following abortion or labor or an acute gonorrheal infection, the patient is put in a bed with the head elevated to favor localization of the infection in the pelvis, two or more ice caps put on the abdomen and the patient is given water by bowel, with nothing by mouth. If vomiting continues the stomach is washed out by means of the tube. Everything is withheld from the stomach for forty-eight hours or more, and quite frequently by that time the temperature has reached normal and stays there. If the temperature elevation persists the patient's strength may be kept up by glucose solution by bowel. Liquids are then given by mouth cautiously, and after a week or more of normal temperature, soft food is given. To secure a daily evacuation of the bowels and for the relief of tympanites, a small enema is given. Purgatives do harm by increasing peristalsis and in this way spreading the infection. It has been quite a common experience to see a rise of temperature for one or two days following a dose of salts or castor oil and even the milder laxatives are injurious, though to a less degree.

Dr. Simpson has given us the following rules by which to determine when a patient is ready for operation: 1. The patient shall have recovered from her acute illness, and shall have regained a satisfactory margin of reserve strength. There can be no question but that a patient, who is acutely ill, is a bad surgical risk. Fresh air, iron tonics and forced feeding as soon as it can be tolerated, aid materially in hastening the patient's recovery. 2. The temperature shall not have risen above normal a single time for a minimum period of three weeks. This is an empirical limit, but practical experience has fully justified its adoption as the shortest time in which it is possible for the patient's protective forces to overcome the acute infection. In our experience the type of case in which the temperature is either very slow in reaching normal or in which it never stays normal is the tubercular infection, especially if there is a secondary mixed infection. 3. There shall have been no marked or persistent rise of temperature after a careful bimanual examination. If the very slight traumatism of a bimanual exmination is sufficient to liberate either bacteria or their toxins in sufficient quantity to cause a rise in temperature, it is quite certain that the vastly greater injury of an operation will cause a much more marked reaction. 4. The inflammatory exudate surrounding the focus of infection shall have been completely absorbed. This is probably the supreme test, and the one that requires the greatest tact and persuasive powers of the surgeon to carry out. Usually long before it is fulfilled the patient considers herself well and becomes insistent on having something done. The exudate is nature's protection that walls off and localizes the infection. So long as it is present, it is evidence that the infection is still active and if liberated will cause serious trouble. In addition, its presence causes serious difficulties during the operation, in the shape of bleeding and friable intestines that are apt to be injured, and if injured are difficult to repair.

The advantage of this conservative plan of treatment are a lessened mortality, and a marked decrease in the postoperative morbidity among those operated on; and, more important, many cases will recover completely and permanently without operation. The disadvantages are the length of the required stay in the hospital. As such a large percentage of these cases are charity ward patients, this is an important consideration to the hospital management. But this objection is more apparent than real. If the patients are in proper condition before operation, their convalescence is rapid and they are able to leave in a short time after operation, while if they are operated on too early, postoperative complications are frequent, often requiring a long stay after operation and possibly with frequent expensive dressings. Again it is stated that patients will not stay in bed for such a long time. Our experience is that when the importance is explained to them, the great majority are very reasonable. If the surgeon operates before he has the patient in the best possible condition, he must assume the entire responsibility himself, even to that of an unnecessary and preventable death.

The Operative Treatment of Pelvic Inflammation. Dr. C. A. Stillwagen. The time of election for operation in pelvic inflammatory disease is of the utmost importance, and is often of great difficulty for the surgeon to decide. It may be summed up briefly as follows: 1. When it is determined that nonoperative measures will not affect a cure. 2. When the patient has been brought to the best physical condition possible by the methods so adequately described this evening. At this time a degree of immunity to her particular infection has been established, and the infecting organism has been destroyed or greatly inhibited.

The surgeon is frequently called on to decide whether or not to drain a collection of pus in the pelvis. I believe that it is the opinion of many that whenever drainage can be established, it is good practice to do so. In pelvic inflammation I think it is to be avoided if possible. With proper treatment serious risk from the presence of the pus is slight and the abscess cavity becomes so thoroughly circumscribed as to greatly facilitate the destruction or inhibition of the bacteria. Of course, whenever there is a large collection of pus that can be evacuated by simply opening into the culdesac, it is the proper treatment to so drain it and not infrequently a permanent cure is brought about by this simple means.

The operation for extensive pelvic inflammatory disease is frequently, I think, the most difficult of any surgical procedure. The operator is not to be handicapped by a short abdominal incision, and it should be made long enough to afford a perfect view of the field of operation and easy manipulation. The first step is the release of intestinal and omental adhesions. This must be done carefully and deliberately, not infrequently by dissection with scissors. The next step is to study the problem before you and decide on your mode of attack. During the course of the operation, it no doubt occasionally happens that an easier and safer procedure is discovered when it is too late to adopt it. It is generally advisable to begin on the side which shows the least pathology. If hysterectomy is to be performed, the vessels on this side are ligated, the broad ligament cut, the cervix amputated, and the mass on the difficult side removed from below upward.

In salpingitis or pus tubes when both tubes have to be removed the question whether or not to remove the uterus comes up. The uterus is, of course, infected, and will have no further function. It is undoubtedly better surgery to remove the uterus. This is my practice except in case of very young women to whom the continuance of the menstrual function may have a sentimental value.

The ovaries are of such use to the physical and mental well-being of the patient that they should be preserved in all cases where it is possible to do so. It sometimes happens, however, that it is not possible, in which case it is of distinct advantage to transplant into the abdominal wall if there is any normal ovarian tissue in the organs removed.

Dr. Huggins, in discussing: The treatment of chronic pelvic inflammation years after primary infection, when the heart muscles and the musculature of the body are poor, has in it a large element of surgical risk. The time should come when the general practitioner is qualified to make a vaginal examination and advise the patient to have the right treatment before she becomes a physical wreck. These patients suffer from backache, increased disturbance at time of menstruation, they become progressively more nervous and finally someone makes a vaginal examination and finds pelvic pathology, which has been responsible for the long train of symptoms during the previous years. The history will be helpful if carefully studied. Years ago, when operations were performed on the patient at the acute stage, the mortality was 15 to 20 per cent. With the more conservative treatment and the delay of operation until all acute symptoms have subsided the mortality has been reduced. However, in puerperal infections it is often necessary to be radical and operate early. It is recognized that it is dangerous to open a streptococcus abscess in the broad ligament, but occasionally, when a patient is going from bad to worse with chills, rising temperature and increased symptoms a laparotomy at this time with drainage of the local infection and ligation of vessels in thrombophlebitis with drainage or incision thereof will often save the life of a patient which otherwise would be lost. It has been my experience that these patients never die from the operation itself.

Dr. Evans: The history of a patient with pelvic inflammation is often misleading. Postpartum infection is often due to old gonorrheal infection which has been caused to light up by the strain of labor. In the nonoperative treatment of pelvic inflammation heat externally and internally is often helpful.

Dr. H. A. Miller: I recall a patient who received a gonorrheal infection with involvement of tubes on her wedding trip, who afterward gave birth to two healthy children, showing that the tubes do repair themselves. Pelvic inflammations which will localize themselves may recover. I am opposed to all vaginal douches, curettage, etc., leaving the natural force to overcome the infection. I believe that most infections are through a traumatized cervix or the site of a low implanted placenta. I have used arsenobenzol, in eleven patients with blood stream infection, seven of whom recovered and are now well. One died of pneumonia, one died of multiple abscess of kidney, two died of general septicemia. The dose used was 6 mg. intravenously on admission. The temperature usually comes down to normal and remains there. If there is a focus from which patient can reinfect herself, temperature may rise again, leukocytes may drop, at which time a second dose of arsenobenzol should be given.

Dr. Weiss: Ovarian abscesses are generally different from any other abscess, due to gonorrheal infection. I fear it more than any other type of pelvic abscess. I have never had success with ovarian grafts. I have never seen a gonorrheal pus tube functionate. In all cases of pelvic inflammation and tumors we should consider ectopic gestation. Ligation of thrombophlebitis is very difficult to perform.

Dr. Stillwagen, closing: I have had a few cases in which the honeymoon, pregnancy and pus tube were coincidental. I have also had three or four cases in which the pus tubes were unilateral.

Frederick B. Utley, Reporter.

COLLEGE OF PHYSICIANS OF PHILADELPHIA

Meeting of April 3, 1918

Some Problems of Nutrition in the Army. By Major John R. Murlin, San. Corps, National Army, Chief of the Division of Food and Nutrition of the Surgeon-General's Office.

Food has been defined as a well-tasting mixture of materials, which, when taken into the stomach, is capable of maintaining the body in any desired state. The choice of these mixtures in the form of menus, their preparation, their digestion and fate in the body, is the science of nutrition. If we had a complete knowledge of every food substance and the transformation it undergoes in the body, just what purpose it fulfils and how it fulfils this purpose and what becomes of it afterwards we should have a complete science of nutrition. A person is satisfactorily nourished when he is maintained in a physical and mental status. In our Army the first requisite was to create a body of well-muscled men. If you could see the great bodies of these men as I have seen them you would agree that this aim is being rapidly achieved. In the muscle-up period a plentiful amount of muscle-forming materials, the best of which is beef, is required. The first legislation fixing the components of the Army ration is dated November 4, 1775, when the Continental Congress fixed one pound of beef and one pound of bread as the allowance for each man per day, "three pints of beans or peas at a price not to exceed $1.00 per bushel, one pint of milk, half a pound of rice or one pound of Indian meal per week, one quart of spruce beer or cider for each man or nine gallons of molasses for each company of men per week." The ration also included candles and soap. The ration fixed July 16, 1798, is in some respects the same as we have today. In 1818 Calhoun, who was secretary of war, recommended that the liquor components of the ration be discontinued. This was concurred in by Surgeon-General Lovell. Congress, however, failed to act, and the liquor continued as a component of the ration until 1838. In 1817 Andrew Jackson, who was commander of the Army, became so impatient with the contractor system that he organized a commissary department for his own army entirely without authority from Congress. This resulted in legislation, dated April 11, 1818, which laid the foundation of our modern Subsistence Department. In 1832 coffee was for the first time made a part of the ration. The ration which prevailed throughout the Civil War, fixed by legislation dated August 30, 1861, was as follows: Beef, 20 ounces; bread or flour, 22 ounces; potatoes, 16 ounces three times a week; beans, rice or hominy "in proportion with above." Then for each company of men or 100 rations: 10 pounds of coffee, 15 pounds sugar, 4 quarts vinegar, 4 pounds soap, 1½ pounds candles.

Besides the "garrison ration," fixed by legislation dated January 11, 1911, the American Army has the reserve ration, the travel ration, and an emergency ration. The last named has been well defined "a substitute for nothing." The Division of Food and Nutrition in its effort to find a satisfactory emergency ration has not been entirely successful but believes that the most satisfactory form of concentrated ration is hard bread supplemented by potted beef or ham, dried beef or sardines, and when there is opportunity for the use of a portable cooker, three ounces of sliced bacon should be added. The ration forming the basis of feeding in training camps does not prescribe what the men shall eat. It is merely used as the basis of money allowance for the ration. A long list of substitutive articles is carried by the Quartermaster Department, but the soldiers must not spend more than the amount of money represented by the cost of the garrison ration, with certain definite percentages of substitutions, at the time and place where they are stationed. If the men do not like what the quartermaster has in store they are at liberty to take money from the quartermaster in lieu of rations and buy materials outside. This is at the discretion of the commanding general.

On the whole it must be said that the mess system in vogue in the American Army works well. The work of the Division of Food and Nutrition is not to supply food for the Army. Our duties are largely of an advisory or inspectorial nature. We are authorized to inspect all the food of a camp with especial reference to its nutritive value; to seek to improve the mess conditions; to determine the actual consumption of food and amount of waste and to report these facts to the division commander. The division now contains 65 officers and some 50 enlisted men. A nutritional survey party, consisting of four officers and several enlisted men, spends from two to four weeks in a camp studying food conditions and making recommendations, and then returns to observe improvements. One contingent has gone abroad to report to General Pershing for similar service in France. Already the Food Division has been able to improve food conditions and has already gathered a considerable body of information regarding the actual consumption of food and the amount of waste. Recent reports from Camp Funston and Camp Sevier show that waste has been reduced to a practically negligible point. Company commanders at their discretion can compel a man to eat at the next meal anything he has left on his plate. We find that the most economical way of serving men in large numbers is by the squad system in which the squad leader shall have authority over the serving of his men. Our work has given the first instance in warfare in which the actual amount of food consumed is estimated directly in the camp and field. This is made possible by our system of feeding men by companies. Meat is the most economical repair material for muscle and other active tissues. The British Army allows 1 pound of meat per man per day; the French Army, ¾ pound; the Italian, ½ pound. Our allowance is 1¼ pounds, but the actual consumption in the camps in this country does not exceed ¾ pound. The question may fairly be asked whether the Government would not be well advised to reduce the quota of meat and replace the amount thus saved with sweets, provided as a part of the ration. The dehydration of vegetables is a question of great interest to the Army and the Quartermaster Department has placed orders for dehydrated potatoes, onions, and carrots for the use of General Pershing's Army. By simply soaking in water and boiling in the same water these vegetables are brought back to the condition of fresh vegetables and often cannot be distinguished from them. The saving of time in the company kitchen is also a highly important element. The Division of Food and Nutrition has already found a method of making meat powder by dehydration at low temperature and a high vacuum. Imagine the difference in the cost of transportation quite aside from the cost of refrigeration of these food products. At the request of the American Red Cross the Food Division prepared an American prisoners' ration which could be shipped to the Red Cross headquarters at Berne, Switzerland, and packed in parcels not to exceed 11 pounds. This was sent three times every two weeks. The list was somewhat as follows: Rice, sugar, dried beef, pork, and beans; peanut butter, soda crackers, evaporated milk, milk chocolate, desiccated strawberry jam, nutmargarine and dried figs. At the request of the Red Cross we also prepared a ration to be known as the invalid ration. The following ration has been approved by the President and adopted: Unpolished rice, yellow cornmeal, sugar, potted chicken, Julienne or compressed soup tablets, dried milk powder or Horlick's malted milk, beef extract, minute tapioca or other form of prepared pudding, crackers, tea, milk chocolate, marmalade, fresh fruit or fruit juice. These articles, however, are regarded as only supplementary to those of the regular ration. The status of the science of nutrition in America is equal to its status in the land of our enemies at the beginning of the war and our Government has been foremost in the support of scientific investigations along these lines.

COUNTY SOCIETY REPORTS

BERKS—MAY

At the meeting of the Berks County Society on May 14, Dr. R. E. LeFevre gave an address on "The Diagnosis of the Minor Gastric Diseases."

Dr. Sidney J. Sondheim read a paper on "Individualizing the Diet in Gastro-Intestinal Diseases," in which he endeavored to individualize the diet according to the temperament, habits, occupation and environment of the patient. Under temperament he divided patients into three classes: (1) the type that with intelligent presentation of the case can be relied upon to carry out instructions; (2) the unimpressionable patient, who must be dealt with severely and rigidly; (3) the neurotic patient, who is apt to underreach the diet and reason that if certain restrictions are necessary greater stringency would be more so. Thus, according to the mental classification of your patient, you must modify your instructions. We must further diet according to habits, means, occupation and environment of the patient so as to place within his reach logical diet that will not strain his resources and as fully as possible fit into the routine of his life.

Dr. C. H. Shearer read a paper on "Surgical Treatment of Gastric Diseases."

Clara Shetter Keiser, Reporter.

BUCKS—MAY

The Bucks County Society met at Bristol, May 8, with 49 physicians present, and President Fleckenstine presiding. Dr. J. Thompson Schell described the use and excellent results obtained in the use of dichlorid of eucalyptus in infected wounds as used in the Northwestern Hospital in Philadelphia. Interesting cases in practice were reported by Drs. W. J. Wilkinson and O. H. Strouse. Dr. Alfred E. Fretz of Sellersville was elected delegate to the Philadelphia Session of the state society in September. Through the courtesy of Dr. Max J. Stern, surgeon in chief, the doctors were the guests of the Merchants' Shipbuilding Corporation and inspected the plant recently built at Bristol. There is alacrity on every side.

Anthony F. Myers, Reporter.

DELAWARE—MAY

The Delaware County Medical Society met at the Chester Hospital on May 16. Dr. G. F. Crothers read a paper on conditions occurring among the employees of the General Chemical Company. The most prevalent conditions are inflammations of the respiratory tract due to the irritant fumes of sulphurous, nitrous, nitric and hydrochloric acids. They vary in severity from a simple rhinitis to severe bronchopneumonias, which often prove fatal. Burns due to sulphuric acid are frequent and often severe. The best treatment seems to be prolonged washing of the burned area in water, followed by a mild dressing. Burns are also caused by other acids and by "nitre cake." Erosion of the teeth from hydrochloric acid is often seen.

Dr. J. Chalmers Lyons described several cases seen in his industrial work. One illustrated the care necessary in treating the patient injured in an industrial plant. A man was blown out of the door of a building by the force of an explosion, but was not hurt. Some time afterward his face became swollen and a lump appeared under the jaw. This was diagnosed as malignant and operation was not advised. He went to another physician who operated and within two months the growth recurred. The man is now claiming compensation, alleging the conditions to be due to this accident.

Dr. George B. Sickel reported the very satisfactory results obtained in the treatment of almost two thousand industrial wounds, seen at the Eddystone Rifle Plant of the Midvale Steel and Ordnance Company, in which the only antiseptic used was dichloramin-T.

George B. Sickel, Reporter.

FRANKLIN—MAY

The Medical Society of Franklin County met in the courthouse, Chambersburg, May 21, with fifty per cent. of the members and a number of visitors present, and President Gordon presiding. A letter was read from Dr. L. H. Seaton, now at the front "somewhere in France."

Dr. Percy D. Hoover discussed some of the advancements in medicine and surgery since the beginning of the war, speaking more particularly of the development of antiseptic treatment of wounds. He reported several cases of lacerated wounds where healing progressed quite successfully under the use of dichloramin. In the technic of the treatment, first of all, the wound must be thoroughly cleansed; all shreds of torn tissue must be removed before the solution is applied. The strength should be from 5 to 10 per cent. applied by atomizer, and the applications should be from 18 to 24 hours apart.

Dr. J. Burns Amberson presented a case of ankylosis of the jaws as a result of infection following an attack of otitis media after measles. The boy, 12 years old, was shown at the November meeting of the society. At that time he was unable to separate the jaws more than one-third of an inch. Since then he has been operated on and now has practically free use of his jaws. Dr. Amberson, in view of his experience and reading, thinks this condition quite rare, but it does occur and may do so when one least expects it.

Lieut. Charles Scott Miller, executive chairman of the Medical Section of the Pennsylvania State Committee of the Council on National Defense, spoke at length on the need of more medical men for the Army and Navy. He appealed to all physicians, even beyond the age limit of 55 years, to register for various lines of medical and reeducational work after the war and with the cripple returned from the war. He discussed the requirements and conditions necessary for the various lines of medical work in the service.

John J. Coffman, Reporter.

LEBANON—MAY

The Lebanon County Medical Society met in Hotel Walton, May 14, at 3 p. m., President Marshall, presiding. Dr. E. K. Boltz read a paper on "Scarlet Fever." Because of a prevalent epidemic the topic was well chosen. After briefly reviewing the history of the disease the speaker described an attack. Great care must be taken not to confound it with measles and to remember that it is communicable at any stage. Children from two to four years of age are the most susceptible and the greatest mortality is found in that period. The vehicle of contagion is uncertain. The earliest symptoms of scarlet fever are extensive hyperemia of the skin and erythema of the mucous membranes. The mild cases are usually the most dangerous to the community because they are left untreated; also they are of greatest mortality because they are practically unattended and subsequent nephritis causes death. In uncomplicated cases the fever abates after the tenth to the fourteenth day. The common sequelæ of scarlet fever are pneumonia, nephritis, otitis media and anemia. Otitis media is caused by direct extension of the infection from the rhinopharynx, the younger the patient the more likely is this dread complication to follow. Usually both ears are affected. The malignant or cerebral cases of scarlet fever usually terminate fatally within 48 hours. The onset is sudden and violent; temperature 105 to 107; convulsions repeated and stupor deep. The treatment of any case of scarlet fever consists essentially in rest and proper diet. Very little medicine is needed. Sponging with a weak carbolic acid solution will allay the itching. Frequent application of pure lard may be used during desquamation. Gargles and nasal sprays are acceptable.

George R. Pretz, Reporter.

PHILADELPHIA—MARCH

The Philadelphia County Medical Society met March 27 at 8:30 p. m., President Hammond in the chair. A symposium on nephritis was presented.

"Symptoms and Diagnosis of Nephritis," was given by Dr. David Riesman. There are two diseases which manifest themselves in most protean ways, hysteria and uremia. Uremia is so much more common than true hysteria that it is important to know its peculiar habits. We do not know what causes uremic poisoning, but we do know that it exerts itself largely on the central nervous system. Every one who has had hospital experience knows the difficulty in a case of coma of determining the cause. There are no very definite ear-marks attending the comas of the various infections. Only the other night I saw a case in which it was very difficult to decide between uremic coma and that attending acute cerebrospinal meningitis. Alcoholic coma and the coma of brain injuries are often difficult to differentiate from uremic coma. Perhaps the most important factor here is to catheterize the patient and examine the urin. Enlargement of the heart and hypertension point toward uremia, and the eyeground changes are important in differential diagnosis. The differential diagnosis of uremic hemiplegia and uremic aphasia is difficult. Those of us trained in the Philadelphia Hospital will remember how often a case diagnosed as apoplexy showed at autopsy no hemorrhage in the brain. The condition of uremic hemiplegia or of monoplegia is transitory in character with a tendency to recover. There is nearly always hypertension with cardiovascular changes of chronic Bright's disease. We do not know in such cases whether we are dealing with a poisoning of the nerve cells or with some vascular crises in the brain; the transitory character of the picture might be compatible with either.

Another nervous condition is that of uremic headache, and this may be the only symptom of which the patient complains. It may be so intense that brain tumor is suspected. There are also severe neuralgias referable to uremic intoxication. Uremic narcolepsy also presents difficulties in diagnosis. In such a case the patient was brought into one of the hospitals in a state of sleep exactly like that from the effect of drugs. The breathing was natural. The urine contained no albumin but always granular casts. Autopsy showed the kidneys to be not much larger than a silver dollar. The only symptom in this case was continued narcolepsy during six days.

Gastro-intestinal symptoms are often very important. Uremic dysentery, as pointed out by an English writer, is rare but does occur. It would seem that the uremic poisoning acting on the colon produced a severe colitis. There may be constant itching of the skin with no other involvement than that of chronic interstitial nephritis. Another manifestation of uremia is the so-called hemorrhagic diathesis; a patient will suddenly bleed from the mouth and nose and perhaps from the bowel and will show patches of hemorrhage in the skin. In all such cases I have seen there has been the contracted kidney with high blood pressure and injured heart. Uremic pericarditis is also seen. In one such case the man had shortness of breath with symptoms of mediastinal tumor; tapping showed hemorrhagic fluid in the pericardium. At autopsy chronic interstitial nephritis only was shown. The diagnosis of uremia and of Bright's disease in general must be made not on one element alone but many factors must be considered. The urinary analysis may be misleading; I have seen cases of bright's disease with no albumin. We may have greatly contracted kidney with low blood pressure. A most valuable point is that with the albuminuria of heart disease the urine is nearly always high colored and contains a large amount of urates. The albumin is generally small in amount and casts are few; but it will often try the best men's skill to determine whether the case is one of Bright's disease with cardiac failure or purely a heart condition.

Dr. O. H. Perry Pepper read a paper on "Functional Tests of the Kidney in Diagnosis and Prognosis." (See previous pages in this issue of The Journal.)

"The Treatment of Nephritis," was given by Dr. William E. Hughes. The picture of Bright's disease shows a condition due to retention of poisons, deterioration of the blood, interference with function of various organs and changes in the circulatory apparatus. The fact must also be taken into consideration that the crippled condition of the kidney is aggravated by attempts to secrete even a normal amount of excrementitious material. Treatment must include the attempt to prevent ingestion of further poisons, to take as much work off the kidneys as possible, to stimulate faulty function of other organs, to restore the blood condition, to minimize the injurious effects of circulation and possibly to stimulate the faulty kidney to renewed activity. The methods of treatment are, therefore, indirect rather than direct.

The matter of food is the most important in treatment. Of foods which are the least injurious, milk probably stands at the head. Sweet milk, buttermilk, whole milk, or skimmed milk is in extreme cases of Bright's disease sometimes a diet to be reverted to as the ideal one. The most injurious form of diet is meat on account of the high nitrogen content. The nitrogenous foods apparently are those which poison most seriously and permanently. It is necessary, of course, to have a certain amount of nitrogenous intake except for a short period of time. Eggs rather than meat may be adopted as the nitrogenous supply of the food. My own practical experience has been that a moderate amount of salt in the diet does no harm. In the use of water we are likely to go the extreme and, by increasing the watery content of the blood, we raise the blood pressure and thus produce a secondary danger to the kidney function. The effervescent beverages contain a certain element of danger in their stimulative character. The state of the digestion is one of the exceedingly serious affairs in Bright's disease and one to which treatment should be directed with the closest attention because through absorption of toxins in the intestinal tract additional irritation in the kidneys is brought about. Intestinal antiseptics I have found offer rather slight reliance, but of these probably calomel is the best. Colonic irrigation is also to be considered. Among the poisons that are operative in the production of Bright's disease or in its aggravation are those produced by fatigue. In no other class of disease is the wearing apparel so important as in Bright's disease. Personally, I believe that woolen of proper weight worn even the year around serves an exceedingly useful purpose.

In the matter of climate, California probably offers the best in this country and next to that, Florida. Undoubtedly patients with Bright's disease have their lives prolonged by removal to some such climates as these. We are all rather fanatical concerning good air and plenty of it. Not infrequently, however, an exacerbation of Bright's disease can be traced to too light bedclothing, to too much fresh air at night. The skin circulation, of vital importance in cases of kidney conditions, has been favorably influenced by baths, and massage to a moderate degree. The hot air baths also in all cases of Bright's disease are distinctly beneficial. Anemia as one of the ill effects of nephritis must always be borne in mind. The drug of most value in treatment is iron, and with it I often use pilocarpin in small doses. The later stages of cardiac failure we treat as in other conditions. The dropsy of Bright's disease is in no way different from any other dropsy; there is the condition of diseased vessels, poor heart power and wrongly mixed blood. Of cardiac stimulants digitalis is the best. It must be borne in mind that many cases of apparent apoplexy, "stroke," are really cases of uremia and that vigorous treatment must be directed to the kidneys. Work so far as possible should be taken off the kidneys, the intestinal tract cleaned out to prevent further absorption of poisons. If there is much hypertension and the patient fairly well nourished and not particularly anemic, bleed and bleed frequently.

Dr. M. Howard Fussell, in discussing: It seems to me that the name Bright's disease would better be eliminated, for the reason that it is applied in many cases of nephritis, and to the mind of the layman carries the idea of an absolutely fatal condition. We all know that many cases of nephritis, if not curable, do not bring death in any short length of time. It is therefore better, as Dr. Pepper has said, to use simply the term "nephritis." While in the vast majority of the arteriosclerotic types, uremia, as Dr. Riesman says, can be easily recognized by the cardiovascular changes, in acute nephritis these changes are not present. Hemiplegia sometimes lasts until death. I remember one case in the Episcopal Hospital of a woman with typical interstitial nephritis. The woman did not seem very ill, but developed a left-sided hemiplegia and died. I thought of apoplexy; but at necropsy there was no sign of thrombus, nothing but the sclerotic arteries. Dr. Riesman said it did not make much difference whether we recognize the arteriosclerotic condition as the basis of certain cases of nephritis so far as treatment is concerned.

I saw this afternoon in the University Hospital a colored man who, it seemed to me, presented an excellent example of the condition due to a general arteriosclerosis. The man has suffered for some time with dyspnea and recurring attacks of edema of the legs. His arteries are like pipe stems; he is 65 years old; has polyuria, with low phenolsulphonephthalein output. From the results of treatment by rest and elimination, in all probability the case is one of general arteriosclerosis. It is not Bright's disease. It is a great mistake from the standpoint of treatment to consider such a case one of nephritis. Such a patient given rest and placed in an old man's home would live a number of years.

It is true that albuminuria does not mean nephritis. It is also true, unfortunately, that a great many physicians believe that albumin in the urine means nephritis. Notwithstanding our disappointments in the results of the removal of teeth and tonsils for the elimination of foci of poisons producing the nephritis, we should continue our search for these foci, and we must increase our knowledge concerning the proper method of dealing with diseased teeth. In some nephritics, meat, however slight in amount, seems to act as an actual poison. In treatment each case is a law unto itself. In acute nephritis diuretics are absolutely harmful. There should be absolute rest, and if there is failing heart, digitalis ought to be used.

Dr. William Duffield Robinson: I would emphasize the necessity of study by every method of research to determine the cause of nephritis. In treatment we can do much by a proper dietary. I advocate one day of starvation a week. The usual quantities of fluid are given, but the tax of elimination is reduced with the lessened food intake. Had I but one drug to use in nephritis I would select pilocarpin. This aids in the greater elimination of solids and the increase of the specific gravity. I am very sure that the essential point in the consideration of nephritis is to seek the cause of the abnormal content in the blood.

Dr. Moses Behrend: Any disrepute into which the operative treatment of nephritis may have fallen is probably due to the fact that most cases are brought to the surgeon too late and that the cases are not properly selected. Cases of chronic interstitial nephritis do very badly as do those of interstitial nephritis in the aged on account of the arterial changes and the changes in the kidneys themselves. The most favorable cases for operation are those of acute parenchymatous nephritis. The best results have been obtained by Edebohls and Lloyd. The former has operated on about 110 cases and the latter twenty-five or thirty. They give a mortality of 10 per cent., and claim a cure in 33 per cent. of their cases, with improvement in 43 per cent. This is an extremely good record; most of the cases were well selected.

My own experience is not at all satisfactory. I have operated on six cases; three were of the chronic parenchymatous type. The last case was that of a child of 6 years; death followed in from twenty-four to thirty-six hours. The case was an extreme one, and operation was the last resort. I have operated for bichlorid poisoning, stripping the kidneys, but the patients died, as they usually do in severe bichlorid poisoning. About 1912 the editors of the *Medical Clinique* sent a letter to the various surgeons. Favorable reports were received from Thiersch. Other operators reported no results. In operation for eclampsia the best results have occurred after labor. Before the puerperium the results were rather fatal. Litchfield's mortality is 1.73 per cent. in 53 cases. Many writers, especially Lloyd, have said that a fibrous capsule redevelops after decapsulation of the kidney, and that this fibrous capsule is just as bad as the original capsule. This is denied by another writer. Opportunity for reoperating on these cases is naturally not very good. E. H. Goodman has noticed a rapid fall of blood pressure after decapsulation, and this may be of some importance in this operation.

WARREN—MAY

The Warren County Society met May 20 at the home of Dr. Hamilton, Warren, with eighteen members and one guest present. Dr. Paul G. Weston, pathologist at the State Hospital, gave a talk on "Syphilis." Its history, prognosis, the history of the modern treatment and the significance of the Wassermann and colloidal gold reactions were all dwelt upon in Dr. Weston's crisp and critical manner. The fact that an individual may contract syphilis, be cured and contract it a second and a third time was brought out to show that many cases of syphilis are cured sometimes with but little if any treatment. He related from his own experience in the examination of spinal fluids of paretics that Wassermann tests may be negative repeatedly both in the blood and in the fluid and finally show a positive reaction, and that only after repeated tests made over an interval of months and years can paresis be excluded if the laboratory diagnosis is negative. A positive Wassermann reaction does not necessarily mean active syphilis, though if persistent it denotes a luetic infection at some time. The subject was well discussed after which the members were invited to partake of refreshments.

Dr. Condit, who recently returned from foreign service and is home on a furlough was at the meeting.

M. V. Ball, Reporter pro tem.

IVY POISONING

A prompt, liberal and constant application of a saturated solution of sodium bicarbonate in ice water to the affected parts will give relief and possibly complete cure within twelve hours.—*N. Y. M. J.*

THE TRUTH ABOUT MEDICINES

NEW AND NONOFFICIAL REMEDIES

Since publication of New and Nonofficial Remedies, 1918, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Chlorcosane.—A liquid, chlorinated paraffin, containing its chlorine in stable (non-active) combination. It is used as a solvent for dichloramine-T and is itself without therapeutic action.

Chlorcosane-Calco.—A brand of chlorcosane containing from 31 to 35 per cent. of combined chlorine. The Calco Chemical Co., Bound Brook, N. J.

Chlorcosane-Monsanto.—A brand of chlorcosane containing from 27 to 30 per cent. of combined chlorine. Monsanto Chemical Co., St. Louis, Mo., (*Jour. A. M. A.*, May 18, 1918, p. 1459).

PROPAGANDA FOR REFORM

Mayr's Wonderful Stomach Remedy.—This is a "patent medicine" adaptation of the old "fake gallstone" trick, which consists of selling large doses of olive or other oil and a saline cathartic. The result of taking this combination is the passage of a number of soapy concretions which the victim is persuaded to believe are gallstones. In 1915 Mayr was convicted under the federal Food and Drug Act for making false and fraudulent claims for his "remedy." As the Food and Drug Act applies only to the packages of a preparation and not to store window displays and newspaper advertising, Mayr has revised the labels, etc., for his "patent medicine," but still makes misleading claims elsewhere (*Jour. A. M. A.*, May 11, 1918, p. 1393).

Cotarnin.—Cotarnin is an artificial alkaloid derived by oxidation from narcotin, by a process analogous to the derivation of hydrastinin from hydrastin (which again differs from narcotin only by an additional OCH_3 group). Cotarnin hydrochlorid is marketed as stypticin, and cotarnin phthalate as styptol. Cotarnin is used systemically mainly against uterine hemorrhage, especially in menstrual hemorrhage, endometritis and congestive conditions. It is ineffective against postpartum hemorrhage or bleeding from gross anatomic lesions, and probably also against hemorrhage in other internal organs. Local application of cotarnin in substance or concentrated solution has a direct vasoconstricting effect and is used in tooth extractions, epistaxis, etc. (*Jour. A. M. A.*, May 11, 1918, p. 1396).

Syphilodol.—According to the French Medicinal Company, New York, Syphilodol is a "synthetic chemical product of silver, arsenic and antimony," the effects of which are very similar to those of salvarsan and neosalvarsan, with the advantage that, in addition to being available in ampules for intramuscular or intravenous use, it is also furnished in the form of tablets for oral administration. The A. M. A. Chemical Laboratory reports that each Syphilodol tablet contained approximately ¾ grain yellow mercurous iodid with minute traces of arsenic, silver and antimony. The laboratory further reports that a Syphilodol ampule contained a liquid having the characteristics of water, in which the presence of less than 1/6000 grain of arsenic could be demonstrated. Shorn of its mystery, Syphilodol therefore is essentially the old, well-known "protoiodid of mercury" (*Jour. A. M. A.*, May 18, 1918, p. 1485).

Pyocyaneus Bacillus Vaccine.—When this vaccine was admitted to New and Nonofficial Remedies in 1910 it gave promise of having therapeutic value. Now the firms whose products are described in New and Nonofficial Remedies advise the Council on Pharmacy and Chemistry that they have ceased to make the vaccine because of lack of demand. Holding the lack of demand as evidence that the vaccine had proved without value, the Council directed its omission from New and Nonofficial Remedies (*Jour. A. M. A.*, May 18, 1918, p. 1496).

The Dr. Chase Company.—A fraud order prohibiting the use of the mails has been issued by the postoffice department against the Dr. Chase Company. This patent medicine concern sold three remedies—pills—which, before the Food and Drugs Act made lying on the label irksome if not expensive, were known, respectively, as "Dr. Chase's Blood and Nerve Food," "Dr. Chase's Kidney Food" and "Dr. Chase's Liver Food." Since the enactment of the Food and Drugs Act, however, the term "food" in the name of the nostrums has been changed to "tablets" for obvious reasons. In 1917 K. E. Hafer, the proprietor of the Dr. Chase Company, was fined under the Food and Drugs Act for misbranding (*Jour. A. M. M.*, May 25, 1918, p. 1557).

Capsules of Bismuth Resorcinol Compound.—According to the label, each capsule of Bismuth Resorcinol Compound (Gross Drug Co., Inc., New York City) contains bismuth subgallate, 2 grs.; resorcinol, 1 gr.; betanaphthol, ½ gr., and creosote (beechwood), 1 m. The preparation was declared inadmissible to New and Nonofficial Remedies because unwarranted therapeutic claims were made for it; because the name is not descriptive of its composition, and because the combination of the stated drugs in fixed proportions is irrational (Reports Council Pharmacy and Chemistry, 1917, p. 139).

Elixir Novo-Hexamine.—The A. M. A. Chemical Laboratory reports that Elixir Novo-Hexamine (Upsher Smith, St. Paul, Minn.) is not a "stable, palatable, potent preparation of Novo-Hexamine, an acid compound of hexamethylenamine," as claimed. but a flavored and colored solution of sodium acid phosphate and hexamethylenamine in diluted glycerol. The Council on Pharmacy and Chemistry considered the report of the laboratory and the advertising claims, and declared Elixir Novo-Hexamine inadmissible to New and Nonofficial Remedies because its composition is secret; because the ill-advised use by the public is invited; because unwarranted therapeutic claims are made for it; because the name is misleading, and because it is irrational to prescribe hexamethylenamine and sodium acid phosphate in fixed proportions (Reports Council Pharmacy and Chemistry, 1917, p. 142).

Formosol.—Sunshine's Formosol (The Formosol Chemical Co., Cleveland, Ohio) is claimed to contain 18 per cent. formaldehyd in a solution of soap. The preparation was refused recognition by the Council on Pharmacy and Chemistry because it was advertised indirectly to the public and because unwarranted therapeutic claims were made for it (Reports Council Pharmacy and Chemistry, 1917, p. 145).

Kalak Water.—Kalak Water (The Kalak Water Co., Inc., New York) is a carbonated, artificial mineral water, said to contain in one million parts sodium carbonate, 4,049.0; sodium phosphate, 238.5; sodium chlorid, 806.3; calcium carbonate, 578.2; magnesium carbonate, 48.9, and potassium chlorid, 47.9. In view of the false and absurd claims made, the Council on Pharmacy and Chemistry declared Kalak Water inadmissible to New and Nonofficial Remedies (Reports Council Pharmacy and Chemistry, 1917, p. 148).

THE WAR SERVICE OF THE MEDICAL PROFESSION

A Survey Including the Names of Civilian Physicians in Military Service and a Tabulation of Statistics by Counties

The same principle that requires each state or community to furnish its quota of men for the Army should also apply in securing physicians for the Medical Reserve Corps. To determine to what extent the various parts of the country had met this responsibility, the American Medical Association last winter compiled a list, by states and counties, of the physicians who had accepted commissions in the Medical Reserve Corps.

These tables make it possible at a glance to determine the important facts regarding each county: the area, population, total number of physicians, number of physicians under 45 and under 55 years of age, number of women physicians, total number of physicians in the county, number of physicians in the county society, and the number of physicians who are already under commission in the Army or in the Navy. The last column of the table is the most important one. It lists the number of physicians in the federalized National Guard, as well as commissioned medical officers in the Reserve Corps of the Army and in the Navy. It does not include the regular Medical Corps of either the Army or the Navy; those who have been commissioned but have not yet accepted their commissions; or those who are serving as contract surgeons. It must be borne in mind, therefore, that this last column of the table does not include those who have made application for commission, or even those who have been awarded a commission unless that commission has been accepted. At the present writing, May 24, there are many pending applications.

The preparation of this survey has been a difficult undertaking. Undoubtedly the data are not perfect: some names may have been included that should not have been; more likely, some have been omitted that should have been included. We ask our readers, and especially county secretaries, to check over the Honor Roll and the tabular data covering their particular county, and to send corrections or comments to Dr. A. R. Craig, Secretary of the American Medical Association, 535 N. Dearborn Street, Chicago. It is urged that this be done promptly, so that a corrected and amplified survey may then be made available to the component societies. This survey for component societies will be in the form of a list of registered physicians for the territory covered; on it will be indicated not only those physicians who have accepted commissions, but also those who have made application for commission, those to whom commissions have been granted but who have not yet accepted them, etc. Those coming within the age limits for the Medical Corps and the Medical Reserve Corps of both the Army and Navy will also be indicated.

We may estimate that in addition to the Regular Corps, a total of 30,000 medical officers will be required for the present year—27,500 for the Army, and 2,500 for the Navy. The number of physicians in the United States, according to the new American Medical Directory now on the press, is146,500. Hence it will take between 20 and 21 per cent. of the total number of physicians of the country to supply the 30,000. This means, as a minimum, one in five. To supply one out of every five physicians to the Government, if managed rightly, ought not to be a severe strain on our profession. There are many communities and industrial centers that can not spare any physician; on the other hand, there are many that can easily spare two out of five. This is especially true of large cities.

Finally, the purpose of this survey is to make available to physicians information which may assist them in determining whether or not their locality is meeting its obligation in providing the needed number of physicians for military duty. The county societies naturally are best qualified to pass on the actual needs of the civilian population of their territory, as well as to furnish information relative to the personnel of the profession. For evident reasons the county society may not always be able to decide who should and who should not volunteer. Such problems can sometimes be better worked out through the cooperation of the county society with the War Committee of the state society and of the American Medical Association. With the state and county organizations cooperating, there is little doubt that our state will be able to supply its quota without serious hardship on either the civilian population or individual members of our profession.

Note.—Many names were added after the Honor Roll was in page form. These are inserted under the respective counties but out of alphabetical arrangement. *They are in italics.*—Ed.—Abbreviated from Jour. A. M. A., June 1, 1918.

PENNSYLVANIA

Adams County

EAST BERLIN—Edgar Allen Miller. GETTYSBURG—John McCrea Dickson. HAMPTON—Robert Dubs Swab.

Allegheny County

AVALON—John. Walter Frey. BELLEVUE—John Paul McComb. BRADDOCK—Marion Starr; Alvin Edwards Bulger; Christopher Gardner; Thomas Sheldon Hicks; Harold Henry Lamb; Thomas Henry Snowwhite. BRIDGEVILLE—Harry G. Clarke. BUNOLA—Elmer O'Neill Peterson. CARNEGIE—Thomas Edward Brown Jr.; Thomas Irving Cotton; John Edward Moore. CASTLE SHANNON—Howard Henry Permar. CORAOPOLIS—Ernest John Aten; Sloan A. Brown; Edward M. Iland; Henri Schmid. CRAFTON—Noss Dean Brant; John Nagle Hayes. CURTISVILLE—David E. Hemphill. DORMONT—John Francis Golden. DUQUESNE—Stephen Shaffer Landis; William Woolshaer Mills; Dennis Eugene Szabo. EAST McKEESPORT—Walter Lowry Henderson. ELIZABETH—Ivo Ernest Rowland. EMSWORTH—Thomas McSwiney Barrett; John Shaffer Plumer. GREENOCK—Edward Theodore Greutzner. HOMESTEAD—Sidney Kallaway; Scott Allan Norris; Harry Joseph Treshler. HOMEWOOD—Thomas L. McCullough. IMPERIAL—Fred Lyle Patterson. McKEESPORT—Milton H. Bachman; Edward Ellis Evans; Samuel Firestone, Jr.; Samuel Goldberg; Louis Jay Goldblatt; William Christian Heisey; Samuel Itscoitz; David Pollock McCune Jr.; Edward Y. Ord; Ralph Leyda Rutledge; Frank George Ungerman; Joseph Coulter Wiley. McKEES ROCKS—Robert William Cotton; Charles G.. Eicher; Hubert J, Goddrich; James Clinton Hawkins; John Huey Humes; Charles Leslie Piper; Chester S. Sierakowski. MT. OLIVER—Carl William Truter; Charles W. Vates. OAKMONT—Joseph Calvin Edgar. PITTSBURGH—Samuel Herbert Adams; John Harrison Alexander; Charles William Allen; Charles Clark Ammerman; Thomas Shaw Arbuthnot; Russell Bigler Armour; Nathan Ashinsky; Ralph John Askin; Paul Gregory Atkinson; Charles Howard Aufhammer.

Frank Raymond Bailey; Joseph Shannon Baird; Moses Haven Baker; Kirk Bentley Barb; William Piper Barndollar; Harry Floyd Baumann; Andrew Ludwig Benson; Ferdinand Landilin Benz; Carl Franklin Bigoney; Owen Henry Binkley; James Daniel Blevins; Max A. Blumer; David Alexander Boggs; John Welch Boyce; David Hartin Boyd; Claude Lee Bradford; Mark Averill Bradford; Charles Raymond Brenner; Robert Bahner Brown; Walter Earl Brown; Paul Cooper Bruce; Albert Joseph Bruecken; Edward Porter Buchanan; Clarence John Buck; Alfred Joseph Buka; Wallace Bulford; William Thomas Burleigh; Charles Francis Butler.

Bert W. Caldwell; John Charles Calhoun; Verner Bickart Callomon; Donald W. Cameron; Robert John Campbell; Waid Edwin Carson; Bender Zelotes Cashman; Burns Stoddard Chaffee; Edgar Thomas Chatham; Edward Perry Clark; Nelson H. Clark; Roy Sidney Clark; Joseph Julius Clarke; Robert Miller Cochrane; Morris Aaron Cohen; Joseph Harry Collins; Alexander Hunter Colwell; William Judd Crookston; George Smith Cunningham; William Louis Cunningham; Clyde Leslie Curll.

Robert Edward Davison; Ewing Wilbur Day; Walter Alfred Dearth; James John Dickinson; Cregg Arthur Dillinger; William Paul Dodds; Bertram Foster Duckwell; Alfred William Duff; John Park Duggan; Andrew Peter D'Zmura.

Samuel Isaac Eber; Thomas Perrine Edmundson; James Franklin Edwards; Augustus Hartje Eggers; Cortlandt Whitehead Elkins; Robert Morgan Entwistle; Russell Morrison Evans.

Sydney Kineman Fenollosa; Joseph Johnson Ferner; Harrison Horton Fisher; Eben Winslow Fiske; Lawrence Henry Fitzgerald; Henry Clement Flood; Austin C. Frank; John Washington Fredette; Morris Frishman; Raymond Joseph Frodey; Daniel Wadsworth Frye; Brown Frazer Fulton.

Charles H. Gano; Shaul George; Henry James Giles; James Lee Gillmore; Carl Goehring; Joseph Brand Gold; Edward Graver; Thomas Wray Grayson; George Garland Grazier; William Harvey Guy.

Homer Emil Halferty; Henry Martin Hall Jr.; John Pugh Hall; Edward Everett Hamer; Samuel Hamilton Jr.; James Marshall Hammett; William Card Harmount; George Randolph Harris Jr.; Fred Hazard Harrison; Clifford Clinton Hartman; Frederick A. Hartung; Walter Benjamin Harvey; John Allen Hawkins; Theodore Lyle Hazlett; James Delevan Hoard; Howard Carrington Heilman; Robert Charles Hibbs; Abram Verner Hicks; Harry Albert Holland; Robert Thurlow Hood;

Daniel F. Jackson; Elmer Chase Jackson; Frederick Murray Jacob; Thomas Gotthart Jenny; George Coffin Johnston; Herbert Le Roy Jones.

Milton Boyd Katzenstein; David Dickey Kennedy; Herbert Francis Kenny; James Purdy Kerr; Russell Henry King; Samuel Victor King; Roscoe Texter Kline; Donald Reed Kunkleman.

George Rufus Lacy; Samuel Earle Lambert; Lyndon Holt Landon; Fred Campbell Larimore; Cyril Francis Lauer; Francis Victor Laurent; Harry Minhern Lavelle; Edward Clyde Leslie; Simon Ashe Levey; Frederick Victor Lichtenfels; James Adams Lindsay; John Marshall Lipscomb; Lawrence Litchfield; James Clarke Logan; James Stewart Logan; John Adams Logan; Herbert Milton Long; Samuel Earle Lyon.

Archibald A. MacLachlan; Charles Buckley Maits; Richard Smart Major; John William Mann; Charles Howard Marcy; John Laughlin Martin; Harry Oliver Mateer; Edward Joseph McCague; Gilpin Montieth McCain; Henry Eugene McClenahan; William John McConnell; Bernard John McCormick; Clayton Lloyd McCoy; David Coyle McCulloch; John Fife McCullough; William Craig Meanor; Louis Oliver Meckel; Evan William Meredith; Lee Watson Milford; James Martin Miller; Laird O'Neill Miller; Robert Talbott Miller; John Davidson Milligan; Charles Core Moore; James A. Munster; Harry Lavelle Murphy; Howard Samuel Myers.

Thomas Gibbons Nelan; A. Boynton Nevling; John Edward Newhouse.

Norman Charles Ochsenhirt.

William Theodore Palchanis; Samuel Bemis Pearce; Reuben Harry Pearlman; James Kingsland Morange Perrine; Ward Irving Pierce; Henry Thompson Price.

Donald George Rafferty; David Louis Rapport; Wm. Burton Getty Ray; Wm. Edward Rectenwald; Maurice Snowden Redmond; Fred Dawson Reynolds; Dewayne Greenwood Richey; Stanley Marshall Rinehart; James William Robinson; Ralph Vincent Robinson; Wilton H. Robinson; Frank Conrad Rote; James Andrew Merle Russell.

Daniel E. Sable; Frederick Scott Salisbury; Hugo Nicholas Sarchet; Arthur Phillip Schaefer; Howard Gustav Schleiter; Walter William Schmid; Thomas Schubb; Karl McCormick Scott; Carroll Jenkins Scurry; Simon Seegman; John Howard Seipel; Alfred Roman Seraphin; Byron Earl Shaw; Nicolas G. L. Shillito; George H. Shuman; Paul Rothrock Sieber; Charles Norman Silman; David Silver; Frank Farrow Simpson; John Reid Simpson; Karl Stanley Simpson; Sumner Clelland Simpson; Roy Ezra Sleppy; Morris Abel Slocum; Henry MacVicker Smith; Stanley Sinclair Smith; Roy Ross Snowden; John Joseph Sosnowski Jr.; Marcus S. Spiro; Thomas Mervin Stahlman; Paul Beadle Steell; John Logan Steffy; Lawrence Lorraine Stepp; William John Stewart; Richard Ernest Stifel; Salvador Peter Sunseri.

Eugene John Truschel; George Wilson Van Gorder; Vite Edgar VanKirk; Carey Judson Vaux; James Kerchner Wagenseller; Albert Adolph Wagner; Clark Woodworth Wakefield.

George S. Wallace; Paul Hardtmayer Walter; William Summers Watson; Maximilian Hugo Weinberg; Benjamin Weiner; George Allan Wesley; Harry Clarkson Westervelt; Earl Philips Wickerham; William Tell Wildhaber; Nathaniel William Winkelman; Walter Holmes Wishard; Charles Hormel Wolfe; Edward William ZurHorst. SEWICKLEY—Frank Lynn McCready; DeWitt Baldwin Nettleton; Charles Krauth Shanor. SHARPSBURG—Norman Robert Graham; Snowden Kennedy Hall. SWISSVALE—William Thomas Pyle; Carl Kaiser Wagener. TARENTUM—George Wilbur Getze; Paul G. L. Hoch. TURTLE CREEK—Edward Jewett Meley. WILKINSBURG—Carl J. Cubbison; Jacob William Earl Ellenberger; George H. Kirkpatrick; William Ody Markell; William Joline Martin; William John McGregor.

James Morgan McNall; Benjamin Howard Patterson; Edward Alexander Pitcairn; Clyde Wilfred Sample; Wilder Judd Walker; James Harvey Whitcraft; James Edward Wyant. WILMERDING—Harry Oliver Pollock; Randall Zimmerman. WILSON—Austin Lynch Cort. WOODVILLE—Ralph L. Hill.

CARNEGIE—Joseph Elmer Magee.

McKEESPORT—Andrew Hunter.

PITTSBURGH—Joseph Armstrong Baird; Guy Sedgwick Vogan.

Armstrong County

ADRIAN—James Earle Quigley. APOLLO—Ray Nelson Lewis. FORD CITY—Carl Howard Robinsteen; Ellis Calvin Winters. KITTANING—Charles H. Furnee; Andrew James Sedwick; Thomas Newton McKee; Edward Heilman McClister. SEMINOLE—Benjamin Joseph Longwell. WIDNOON—Thomas R. Hillard.

Beaver County

BEAVER—Fred Blanchard Harrington; Fred Bailey Wilson. BEAVER FALLS—John Muntz Jackson; William J. Sterrett; Jesse Howard Swick; Leroy Stewart Townsend. FREEDOM—George Fay Boal; Francis Howard McCaskey. MONACO—John Huber Wagner. NEW BRIGHTON—William Frederick Beitsch; Ralph H. Boots; Samuel Henry Pettler. WOODLAWN—George Walworth Mellon.

Bedford County

BEDFORD—Wilmot Ayres. BREEZEWOOD—Frank Guillard. CUMBERLAND VALLEY—Alvin Zenas Stoner. DEFIANCE—Samuel Thomas McCabe. LOYSBURG—James Andrew Shaffer. OSTERBURG—Thomas Wood Cook Jr. SHELLBURG—John C. Anderson Jr.; Maurice Victor Brant.

Berks County

BIRDSBORO—Franklin Pierce Lytle. BOYERTOWN—Charles Brewer Dotterrer; Henry Edgar Keely. CENTERPORT—Lewis R. Tryon. DOUGLASSVILLE—Walter Jordan Sener. GIBRALTER—DeForest Ballou Jr. HAMBURG—Adams Miller Robinhold. MORGANTOWN—Joseph Allen

PENNSYLVANIA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Adams	528	13.9	34,319	903	38	..	14	25	26	3
[1]Allegheny	725	0.4	1,196,128	699	1,710	50	1,031	1,226	1,099	345
Armstrong	653	9.1	79,068	1,098	72	1	42	48	57	10
Beaver	429	3.7	94,355	799	118	3	62	83	66	13
Bedford	1,026	23.9	38,879	904	43	..	21	33	22	7
[2]Berks	865	3.4	200,454	779	257	8	128	180	109	35
[3]Blair	534	3.8	126,202	888	142	5	75	95	87	24
Bradford	1,145	15.9	54,526	757	72	1	31	44	53	11
Bucks	608	5.3	80,428	793	114	6	45	74	69	10
Butler	790	8.7	84,169	924	91	1	52	69	59	7
[4]Cambria	717	4.2	210,874	1,240	170	5	118	140	106	27
Cameron	392	65.3	8,079	1,346	6	..	3	5	4	..
Carbon	406	9.0	58,931	1,309	45	..	24	33	29	7
Center	1,146	20.8	43,810	796	55	3	16	32	36	10
Chester	777	5.1	119,082	788	151	7	70	97	91	25
Clarion	601	13.1	38,356	833	46	1	23	36	31	8
Clearfield	1,142	12.4	103,371	1,123	92	..	52	64	67	13
Clinton	878	27.4	33,259	1,039	32	..	15	22	25	5
Columbia	478	8.4	54,725	960	57	..	26	34	50	10
Crawford	1,038	13.5	61,565	799	77	3	36	50	45	13
Cumberland	528	6.5	57,499	737	78	4	26	52	49	15
[5]Dauphin	421	2.4	151,998	710	214	9	122	156	154	22
[6]Delaware	185	0.9	134,800	687	196	18	92	137	106	36
Elk	806	29.7	38,038	1,408	27	2	14	17	22	1
[7]Erie	781	4.1	127,960	680	188	8	104	135	127	39
Fayette	795	5.0	209,083	1,319	158	6	102	131	116	38
Forest	423	60.4	9,435	1,347	7	..	4	6	3	..
Franklin	751	9.7	63,331	810	78	4	39	57	51	14
Fulton	402	57.4	9,703	1,386	7	..	4	7	6	1
Greene	574	13.3	29,320	681	43	1	17	29	19	2
Huntington	918	19.5	40,971	871	47	1	19	34	33	7
Indiana	829	10.6	83,474	1,070	78	1	43	57	52	13
Jefferson	661	13.2	65,992	1,739	50	..	37	48	40	10
Juniata	392	26.1	15,013	1,000	15	..	4	8	13	2
[8]Lackawanna	451	1.5	307,556	1,049	293	8	176	217	174	59
[9]Lancaster	941	4.2	172,712	771	224	15	100	143	132	22
[10]Lawrence	360	3.6	79,512	819	97	5	49	78	60	14
Lebanon	360	4.5	63,753	807	79	1	27	46	36	6
[11]Lehigh	344	2.2	137,035	867	158	2	78	112	92	14
[12]Luzerne	892	24.5	406,009	1,134	358	7	203	280	207	79
[13]Lycoming	1,220	10.4	84,571	722	117	3	45	78	82	11
McKean	987	15.7	47,868	759	63	1	28	43	49	8
Mercer	700	6.9	92,526	907	102	3	52	57	64	16
Mifflin	398	10.2	31,160	798	39	2	7	32	26	3
Monroe	623	18.3	24,239	712	34	4	12	21	23	7
[14]Montgomery	484	1.2	191,921	489	392	19	128	190	155	50
Montour	130	7.2	14,868	782	19	1	11	15	16	3
[15]Northampton	372	2.1	148,089	831	178	3	88	131	130	60
Northumberland	454	8.3	126,390	1,469	86	4	48	74	73	12
Perry	564	25.6	24,136	1,097	22	1	10	13	17	3
[16]Philadelphia	133	0.4	1,735,517	502	3,453	262	2,025	2,629	1,779	767
Pike	544	90.7	8,033	1,338	6	..	2	3	4	..
Potter	1,071	42.8	29,729	1,118	25	2	9	18	16	4
Schuylkill	777	4.2	233,419	1,261	185	4	114	154	105	44
Snyder	311	14.8	16,800	800	21	1	9	14	15	4
Somerset	1,034	14.2	81,042	1,111	73	..	37	54	50	8
Sullivan	458	38.2	11,293	941	12	1	4	10	9	2
Susquehanna	824	20.1	37,746	920	41	..	13	29	20	5
Tioga	1,142	20.0	42,829	751	57	2	20	37	36	7
Union	305	14.5	16,249	773	21	1	6	15	16	1
Yenango	661	8.9	61,257	827	74	2	36	57	50	7
Warren	902	16.7	40,029	740	54	3	23	42	37	9
Washington	862	4.8	181,271	879	206	..	96	148	122	25
Wayne	739	23.8	29,236	943	31	1	13	26	26	3
Westmoreland	1,039	4.0	283,225	1,106	256	10	122	182	166	60
Wyoming	397	17.3	15,509	674	23	..	9	16	19	2
[17]York	903	5.5	150,997	909	166	2	79	114	122	23
Totals	44,831	3.01	8,783,728	761	11,539	518	6,190	8,342	6,750	2,022

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1. Includes McKeesport, population 48,299; physicians 61 [M.R.C. 13], and Pittsburgh, population 586,196; physicians 1,170 [M.R.C. 258].
2. Includes Reading, population 111,607; physicians 162 [M.R.C. 24].
3. Includes Altoona, population 59,712; physicians 89 [M.R.C. 16].
4. Includes Johnstown, population 70,473; physicians 98 [M.R.C. 18].
5. Includes Harrisburg, population 73,276; physicians 146 [M.R.C. 14].
6. Includes Chester, population 41,857; physicans 68 [M.R.C. 14].
7. Includes Erie, population 76,592; physicians 129 [M.R.C. 29].
8. Includes Scranton, population 149,541; physicians 212 [M.R.C. 41].
9. Includes Lancaster, population 51,437; physicians 87 [M.R.C. 16].
10. Includes New Castle, population 41,915; physicians 66 [M.R.C. 9].
11. Includes Allentown, population 65,109; physicians 102 [M.R.C. 12].
12. Includes Wilkes-Barre, population 78,334; physicians 147 [M.R.C. 32].
13. Includes Williamsport, population 34,123; physicians 71 [M.R.C. 6].
14. Includes Norristown, population 31,969; physicians 52 [M.R.C. 8].
15. Includes Easton, population 30,854; physicians 74 [M.R.C. 6].
16. Includes Philadelphia, population 1,683,664; physicians 3,450 [M.R.C. 764].
17. Includes York, population 52,770; physicians 53 [M.R.C. 15].

Zook. READING—H. Melvin Allen; Walter Melot Bertolet; Charles Solomon Cantongh, Roy Douglas Champlin; Leon Galvin Darrah; Agnew Fritz Frankhauser; Paul Henry Gerhardt; Simon Benjamin Glick; Edward Knight Golding; David Solomon Grim; Clifford Leslie Kaucher; John Glenwood Knauer; George William Krick Jr.

Wellington Alfred Lebkicher; William Leiser; William Samuel Long; David William Morgan; Henry Isaac Newcomet; Addison May Rothrock; Henry Franklin Schantz; Ira Goff Shoemaker; Thomas Millette Snyder; Robert Eugene Strasser; Charles Alvin Yocum. SINKING SPRING—James Glicker Matternes. TEMPLE—Abner Henry Bauscher. WOMELSDORF—John Elias Livingood

Blair County

ALTOONA—George Ellsworth Alleman; Fred Herman Bloomhardt; Samuel Isett Bloomhardt; Daniel Bohn; Arthur St. Clair Brumbaugh; John Hughes Galbraith; Andrew Jackson Williams Handwork; John Dan Hogue. Ernest Justin Hoover; Logan E. Hull.

David Kaufman; Don Cameron Kyper; Charles Henry Manlove Jr.; Claude Edwin Snyder; John Robert Thompson Snyder; James Swan Taylor. BELLWOOD—Brooklyn Boyer Lavengood. HOLLIDAYSBERG—Webster H. Calvin; Roy Deck; Arthur King Lotz; Samuel Calvin Smith. ROARING SPRINGS—Wilfred Lorenz Hair. TYRONE—Carey Clarence Bradin. John Blaisdell Nason.

Bradford County

ATHENS—Carlos Pennington Holcomb; Reuben Louis Leverton. OVERTON—Arthur Judson Bird. SAYRE—Donald Guthrie; Carlyle Newton Haines. John Mark Higgins; Walter Edward Lundblad. SYLVANIA—Grant Harden Gustin. TOWANDA—Guy Truman Holcombe. WYALUSING—George Hiram Blakeslee Terry, WYSOX—Howard Cornelius Down.

Bucks County

BRISTOL—Charles Shewell Abbott; William Cooper Le Compte; James Frederick Wagner. DOYLESTOWN—Percy Musgrave. EDDINGTON—John Morris Carter. LANGHORNE—Samuel LeRoy Ridge. MORRISVILLE—Stephen Smith Percy Wetmore. NEWTOWN—George Albert Parker Jr. SPINNERSTOWN—Victor K. Marsteller. TULLYTOWN—James Monroe Klenk.

Butler County

BUTLER—Ephriam E. Campbell; Clarence Henry Ketterer; Claude Albert Robb; Roy Logan Stackpole. MARS—Alois Frank Seifries. PROSPECT—Walter Thompson Lowry. SLIPPERY ROCK—Frank Dickson Campbell.

Cambria County

BARNESBORO—Albert Frank Dunsmore; Harry Franklin Garman. CONEMAUGH—Albon Ellsworth Fichtner. CRESSON—James Albert Lynch; Neill Duncan MacArtan. ELMORA—Clarence Eugene King. JOHNSTOWN—John Walter Bancroft; Kent Amos Bowman; Edwin Charles Boyer; Bennett Arthur Braude; Moses Clayborne; Charles Glassmire; William Edward Grove; Charles Elliott Hays; Homer LeRoy Hill.

John Bodine Lowman; Louis Henry Mayer Jr.; Joseph John Meyer; Arthur Miltenberger; Harry Hartzell Penrod; Daniel Patteo Ray; Frank Scharmann; Francis M. B. Schramm; Bernard Pierre Widmann. NANTY GLO—William Walter Wilkinson. SOUTH FORK—Edward Pardoe. ST. MICHAEL—Esra Pope Dickinson.

Carbon County

BEAVER MEADOWS—Paul M. Hunsicker. LANSFORD—Joseph John Bellas; Russell R. Jones; Robert Harrison Kistler; Maurice Henry Neumuller. PALMERTON—Roger Putnam Batchelor; Harold Edwards Hersh.

Centr County

BELLEFONTE—David Dale; Scott M. Huff; Thomas Rogers Morgan. MILLHEIM—John Andrew Hardenbergh. PHILLIPSBURG—Andrew Jackson Griest; Samuel Marks; Harry Hartsock Thompson. PT. MATILDA—Joseph Walter Harshberger. STATE COLLEGE—Peter Hoffer Dale. WOODWARD—George Potter Ard.

Chester County

ATGLEN—Frederick Lewis Baker. BERWYN—Frank L. Richards. CHATHAM—Lawrence Clayton Moore. CHESTER SPRINGS—Frank Happersett Wells. COATESVILLE—William Gifford Francis; De Haven Hinkson; Oscar J. Kingsbury; Charles Ira Pratt. KENNETH SQUARE—John Whitfield Merryman; Jacob Julius Schwegler. MALVERN—Clarence S. Kurtz. OXFORD—Chester Barry.

PAOLIE—Robert Coffman Hughes. PARKER FORD—Charles Dimm Dietterich. PHOENIXVILLE—Mark Calvin Rabert. STRICKERSVILLE—James A. Buchanan. WEST CHESTER—John Aloysius Farrell; Vincent J. Grauten; Israel Pemberton P. Hollingsworth; Charles Rees Palmer; Henry Pleasants, Jr.; Henry Abraham Rothrock; George King Strode; William Wellington Woodward; Walter Webb.

Clarion County

CLARION—Charles Arnold Fitzgerald; William Barr Hetzel; Franklin Pearce Phillips. CURLLSVILLE—Charles Arthur Mooney. FOXBURG—John Notley Camp. MONROE—Elmer C. Texter. NEW BETHLEHEM—William Otta Dougherty; William Charles Keller.

Clearfield County

BECCRIA—Frank Klare Miller. BOARDMAN—James Hudson Fiscus. BURNSIDE—William C. Browne. CLEARFIELD—Arthur Donald Cowdrick; William Scott Piper; Lever Flegal Stewart. COALPORT—Bradley Hartman Hoke. FALLS CREEK—Archie Bernice McConnell; Arthur Foster McCormick. HOUTZDALE—William Raymond McKenzie. KYLERTOWN—George Breen Kirk. OSCEOLA MILLS—Austin Chalmer Lynn. TYLER—Harry Arthur Vosburg Jr.

Clinton County

BEACH CREEK—Perry McDowell Tibbins. CHATHAM RUN—Joseph Mackay Corson. LOCK HAVEN—John Burnworth Critchfield; George Dorsey Green; James Louis Lubrecht

Columbia County

BERWICK—Edward Lowndes Davis; William C. Hensyl. BLOOMBURG—Henry Bierman; Jacob Ralph Brobst; John Tremper Macdonald; Donald Barton McHenry; James Robert Montgomery Jr.; Charles Benjamin Yost. MILLVILLE—James Robert Gemmill. NUMIDIA—Allen Vincent Carl.

Crawford County

CAMBRIDGE SPRINGS—Charles E. Mullin. CONNEAUT LAKE—Harry Lee Brush. CONNEAUTVILLE—Samuel James Dickey. GENEVA—Arne Wilbur Clouse. MEADVILLE—Edwin Ellsworth Brophy; Frank Allison Clawson; William Emory Hyskell; Joseph Charles McFate; George Adrien Poux; Andrew Ignatius Rosenberger; William Barton Skelton. TITUSVILLE—Valentine Burton Eiler; Albert Claudius Shannon.

Cumberland County

CARLISLE—Elmer A. Hudson; William Tell Phillipy; Edward Robert Plank; William Starick Ruch; Harry Allen Spangler; Walter Scott Taylor; Parker U. Wagoner. HUNTSDALE—Selden Sylvester Cowell LEMOYNE—Edgar Shuman Everhart. MECHANICSBURG—Henry Albert Smith; Richard Rockafellow Spahr. MT. HOLLY SPRINGS—Harry B. Fralic. NEW CUMBERLAND—John Linn Good. NEWVILLE—Perry William McLaughlin. SHIPPENSBURG—John Bruce McCreary.

Dauphin County

ELIZABETHVILLE—Robert Edwin Barto; Floyd Troutman Romberger. HALIFAX—Frederick C. Smith. HARRISBURG—William James Basler; Carson Coover; William Tyler Douglass.

Jesse Luther Lenker; George Reily Moffitt; Roscoe Livingston Perkins; Frank Fredk. Dunott Reckford; James Merle Robbins; Benjamin F. Royer; George Abraham Treiman; Richard Yoffe; George Abram Zimmerman. LINGLESTOWN—Frank Landis Shenk. MIDDLETOWN—William Powell Evans. OBERLIN—Frederick Webster Byrod. STEELTON—Jacob Markwood Peters; Robert McGuigan Hursh.

HARRISBURG—Gilbert Lagoria Dailey; John William MacMullen.

Delaware County

CHESTER—Ethan Allen Campbell; John O. Crist; William Benedict Evans; William Knowles Evans; John Schofield Eynon; Robert Anthony Kilduffe Jr.; Frank Richard Nothnagle; Adrian Van Bracklin Orr; James Ray Parker; Ralph Edward Pilgram; Charles Andrew Rowland; George C. Webster. CLIFTON HEIGHTS—Estes Paine. COLWYN—Clark Samuel Long. EDDYSTONE—George L. Armitage; Alexander Donald Ferguson. ELWYN—Percival M. Kerr. GLEN OLDEN—Claude Pasamore Brown; Harry Gallagen. LANDSDOWNE—Eugene A. Case; John Aloysius McKenna. LLANERCH—William F. Moore; Isaac Burton Roberts. MARCUS HOOK—Harry Thomas Stockton; Walter John Whitehouse. MEDIA—Isaac Ivisen Parsons. MORTON—Alfred G. Tinney. NORWOOD—Samuel Beveridge Harris. RUTLEDGE—Norman Davis Smith. WALLINGFORD—William Henry Furness; Casper Wistar Miller. WAWA—Peter McCall Keating. WAYNE—Clarence Wyman Lincoln; Cyrus Walter Truxal Jr.

CHESTER—Anthony Maurice Bennardi; Albin Roman Rozploch.

Elk County

JOHNSONBURG—Eugene Bellantyne Sharp.

Erie County

ALBION—LeRoy Umburn. CORRY—Ninde Troy Gillette; Theodore Alvin Little. CRANESVILLE—John Franklin Rutherford. EDINBORO—Harold Alfred Ghering. ERIE—Martin Clement Barrett; Ignatius Aloysius Bednarkiewicz; John Eastman Belding; Guy Cluxton Boughton; James Elmer Croop; Arthur George Davis; Joseph Edward Dudenhoefer; Scott Dillon Gleeten.

Ralph Emerson Henry; Elmer Hess; James DeWitt Jackson; Charles Cochran Kemble; Lemuel Abraham Lasher; Carl Blaine Lininger; John Hepburn Lloyd; Ray Henry Luke.

Frank Peter McCarthy; Whitman Carlisle McConnell; Richard Oliver Miller; John Joseph O'Donnell; George Arthur Reed; William Ridgway Rothe; George William Schlindwein; James Robert Smith; Joseph Armin Stackhouse; Jesse Cunningham Stilley; James T. Strimple; Frank Alfred Trippe; Elmer Grant Weibel. FAIRVIEW—Walter Raymond Krauss; Harry Eugene Lyons. North East—James Louis Heard. NORTH GIRARD—Adelbert Boyd Miller. WESLEYVILLE—Ross W. Thompson.

Fayette County

ALICIA—George Washington Lang. ALLISON—W. Sturgis Frankenburger. BROWNSVILLE—George Fulton MacDonald. CONNELSVILLE—William James Bailey; Don. Dickinson Brooks; Edward W. Douglas; Elliott Bard Edie; James Lester Junk; Alexander Robert Kidd; Robert S. McKee. DUNBAR—James B. Carroll; Samuel Clarke Dowds; Francis Joseph King. FAIRCHANCE—William Proudfit Patterson. GRINDSTONE—Alexander White Spears. HILLCOKE—Walter Teed Messmore. MASONTOWN—Harry Brady; John Lindsey Messmore; Edgar Kenneth Wells. NEW SALEM—Carton Harold Davidson; David Earl Lowe. POINT MARION—Charles James Devlin. REPUBLIC—Charles Calvin Ryan. SMITHFIELD—Horace B. Guiher; Jesse Lazear McCracken. SOUTH BROWNSVILLE—Arthur Keys Oldbert. SOUTH CONNELSVILLE—Paul Goewey Dick. UNIONTOWN—Samuel Austin Baltz; Charles Dana Bierer; Albert Edward Coughanour; Benjamin Perkins Doran; Robert Harrison Jeffrey; Clark McEwen Luman; William Arlstead McHugh Jr.; Peter Burrill Mulligan; George H. Robinson Jr.; Charles Hervey Smith. WHITSETT—Don Cameron Fosselman.

Franklin County

CHAMBERSBURG—Charles Core Gans; Lewis Hiram Seaton; Michael Webster Stofer. FORT LOUDON—Richard Penn Smith. MONT ALTO—John Berry; Henry Adam Carskadden; Henry Aloysius Gorman; John Albert Berchard Lowry; Jacob Sam Posner Makler; Augustine Joseph Mulligan; Nathaniel George Shafritz; Maurice Theodore Sloane; William Wilson Woods. WAYNESBORO—David Miller Shoemaker; Samuel Brown Thomas.

Fulton County

BUCK VALLEY—James Malcolm McKibbin

Greene County

JEFFERSON—John Charles Kerr. WAYNESBURG—Hersey Elroy Orndoff.

Huntingdon County

ALEXANDRIA—James Roy St. Clair. DUDLEY—Howard Dovey. HUNTINGTON—Samuel Oscar Brumbaugh. MAPLETON—Frederick Pratt Simpson. ORBISONIA—Raymond Rudolf Decker. PETERSBURG—John Maulfair Keichline Jr. MOUNT UNION—James Robert Morrow.

Indiana County

CLYMER—J. Merle Everwine. BLACK LICK—William Charles Widdowson. HOMER CITY—Charles Henry Kirk; Melville Mack Palmer. INDIANA—Medus Monroe Davis; William Dunn Gates; William Henry Nix. LUCERNE MINES—James Ward. MARION CENTER—John Murdock Stewart. PLUMVILLE—Clark Monroe Smith. ROSSITER—Waldo Emerson Preston. SALTSBURG—Abraham Jerome Kaiser. WATERMAN—Leon Jermain Camche.

Jefferson County

BROOKVILLE—David McAllister Aikman; Wayne Lawson Snyder. DELANCEY—Charles Robert Stevenson. PUNXSUTAWNEY—Fred Wallace Black; Jeremiah Alexander Klotz; Guy Musselman Musser. RAMSAYTOWN—Walter Dick. SUMMERVILLE—Alverdi John Simpson. TIMBLIN—Harry Weaver Allison. WISHAW—Willis D. Hall.

Juniata County

RICHFIELD—Percy Edward Deckard. VAN DYKE—Henry Stanley Kerchner.

Lackawana County

ARCHBALD—John Vincent Kearney; Patrick Joseph McDonnell; John Hinton Moss. CLARK'S SUMMIT—Herbert Eugene Simrell. DALTON—Howard Locke Vail. DUNMORE—Eugene Augustine Curtin; Frank Michael Ginley; Almon Cyrus Hazlett. GLENBURN—Elwood Linnell Davis. MAYFIELD—Thomas Patrick Martin. OLD FORGE—John Lawrence Loftus. OLYPHANT—John Joseph Bendick. PECKVILLE—Milton Irving Pentecost; Clarence Leonard Young. SCRANTON—John Vincent Allen Jr.; George Brown Beach; Frank Andrew Carroll; Daniel Edward Berney; John Decker Butzner; Harvey Burton Cornell; John Bliss Corser; Arthur Eggleston Davis; Earle Rice Davis; Fred Whitney Davis; William Joseph Leo Davis; James Nelson Douglas.

Leo Patrick Gibbons; Howard Winslow Gibbs; Harry Goodfriend; Clare Heilner Hanley; Harry Kane Hobbs; Heister Vanderslice Hower; David John Jenkins; William Edwin Keller; Thomas Gore Killeen; Harry Michael Kraemer; James Davis Lewis; Jacob John Lonsdorf Jr.

Connell Edward Murrin; James Edward O'Toole; Lewis Herbert Raymond; Earl Herb Kilhorn; Linford Brooks Roberts; John Isaac Robison; James Peter Haggerty Ruddy; Elmer Bryant Shaul; Matthew J. Shields; Isadore Edward Smigelsky; James Stein; Frank Paul Strome; Robert E. Thomas.

Jonathan M. Wainwright; Frank Robert Wheelock; Robert Vandenberg White; Albert Jefferson Winebrake; John Francis Zychowicz. QUARRYSVILLE—De La Ray Signor. WAVERLY—Robert Bliss Mackey.

PECKVILLE—Ralph Harrison Armstrong.

Lancaster County

CHRISTIANA—John Ross Smith Martin. COLUMBIA—Milton Valentine Miller; Charles Joseph Shillott. LANCASTER—Theodore Burton Appel; Charles A. Cohn; Henry Blaine Davis; Harry Culbertson Fulton; Harry Gilmore Hassenplug; Samuel H. Heller.

William Hubley Herr; William Henry Jones Jr.; Harry Pomerantz; Gardner Atlee Sayres; Grover Cleveland Schwartz; William Erdman Seibert; Charles P. Starr; Grant B. Weaver. LITITZ—John Lincoln Hertz. MANHEIM—Pursifor Frazier Guie.

LANCASTER—Percy Clark Joy; John Hazlett Turner, III.
MT. JOY—Wm. McC. Workman.

Lawrence County

ELLWOOD CITY—Colin M. Dumm; Charles McClellan Isemau; Boyd Willamber Schaffner; David Clair Vosler. HARLANSBURG—William David Cleland. NEW CASTLE—James Magee Blackwood; Thaddeus Clair Brown; Jesse Robert Cooper; Louis Ward Grossman; Benjamin Franklin Haines; Howard C. Harper; Don Carlos Lindley; Frank E. Urey. NEW WILMINGTON—Charles James Smyser.

Lebanon County

ANNVILLE—John Edward Marshall. LEBANON—Adam George Heilman; Alfred Desch Strickler. NEWMANSTOWN—David M. Voga. PALMYRA—Simeon David Bashore. REXMONT—John Dohner Bogert

Lehigh County

ALLENTOWN—Quintin David Arner; Warren H. Butz; George Solomon Deibert; Ralph Andrew Fisher; William Frederick Herbst; Martin Seler Kleckner; Walter Emery Lang; Harold Frederick Lanshe; Ruben Axel Emanuel Peterson; Charles Benjamin Reitz; Thomas Lawrence Smyth. CATASANSAUQUA—Harry L. Baker. COOPERSBURG—Frank H. Long.

ALLENTOWN—Clarence Calvin Rogers.

Luzerne County

ASHLEY—Daniel Francis Frederick. CONYNGHAM—Robert Ottens Koons. DORRANCETON—Marshall Cloyd Rumbaugh; Frank Donaldson Thomas; Laurence M. Thompson. EDWARDSVILLE—Isaiah C. Morgan. FORTY FORT—Daniel Guy Robinhold. FREELAND—Charles Seymour Dickinson; John Clarence Gabel; Albert Augustus Redelin; Roy Truckenmiller. GLENYON—Albert Meredith Thomas. HAZLETON—Ralph Emerson Buckley; John Rose Dyson; Peter Edward Fagan; John A. Hugo; Joseph Clement Kochczynski; Henry J. Owens; Otto Carl Reiche. KINGSTON—Abe Albert Dattner; Francis Brian Gryczka; Walter Leonard Lynn; Lewis Leonidas Rogers Jr.; Charles Layton Shafer; Frank Paul Summa; Edward Inman Wolfe. MINERS MILLS—John J. Hislop. MINERSVILLE—Hiram Grant Straub. NANTICOKE—Frederick William Heyer. NESCOPECK—Benjamin Biscombe Cook. PITTSTON—Joseph Peter Burke; August Gustav Hinrichs; James Thomas Madden; John Joseph Madden; Charles Everett Nicholson; Francis Clement O'Malley; Herbert LeRoy Ransom; Harry Rubinstein. PLAINS—William Fuller Harrison; Joseph James Kocyan. PLYMOUTH—James Edward James; Charles Frederick Netzel; William Clifton Stiff. SCRANTON—Robert Joseph Flynn. SUGAR NOTCH—John Joseph Caffrey. SWOYERSVILLE—John Leonard Lavin. WILKES-BARRE—Erick Archibald Adams; Francis Lopatto Alexaitis; Thompson McDonald Baird; Edward W. Bixby; Xavier R. Collmann; John Webster Cressler; William John Davis; Francis Edward Donnelly; William Joseph Doyle.

Wilmer Clayton Dreibelbies; Elijah M. Ellsworth; Carl Wood Espy; Stanley Leopold Freeman; Thomas Reed Gagion; Morgan Everett Griffith; Austin Ladimar Hauslohner; Cyrus Jacobosky; Francis John Krajewski.

Joseph Leo McGinley; Patrick Francis McHugh; Thomas Vincent McLaughlin; Leo Clement Mundy; Robert Harrison Murdock Jr.; Charles Hayden Phillips; William C. Reese; Simon Warren Reichard; Nathaniel Ross; George Ario Shuman; Harry Alexander Smith; Max Tischler; Raymond L. Wadhams; Clark H. Yeager. WYOMING—A. Burton Smith.

Lycoming County

ELLENTON—Barton Brown. JERSEY SHORE—Lee McCloskey Goodman. MONTGOMERY—Wilbur Emerson Turner. MONTOURSVILLE—Floyd Edward Muaster. ROARING BRANCH—Galen David Castlebury. WILLIAMSPORT—Waldo Willard Hull; Milfert Weaver Meyers; John Budd Nutt; Charles Allen Pryor; Robert K. Rewalt; Robert Fitzsimmons Trainer.

McKean County

BRADFORD—William C. Hogan; Benjamin F. White Jr. ELDRED—Earle McCormick McLean. PT. ALLEGANY—Albert Jackson Colcord; William Jackson McGranor. SMITHPORT—Robert Hamilton; William Alonzo Ostrander; Everell Verui Chadwick.

Mercer County

FARRELL—William Griffith Berryhill; Lawrence Norman Breene; William Morgan Writt Jr. GREENVILLE—Frederick Oliver Batteiger; Lewis W. Glatgen; Clarence Wilson McElhaney. GROVE CITY—Edwin Marshall McConnell; Homer Smith Wilson. JAMESTOWN—Carl Henry Bailey. MERCER—William Waddle Richardson. SHARON—Orlando A. Jones; Harry William Millikin; Augustus Michael O'Brien; John Francis Spearman. SHARPESVILLE—Benjamin Allen Frye. STONEBORO—Clarence Jay Buckley.

Mifflin County

BURNHAM—Llewelyn Ivor Thomas. LEWISTOWN—Charles Milton McCoy; Frederick Augustine Rupp.

Monroe County

DELAWARE WATER GAP—John Henry Stearns. EAST STROUDSBURG—Carl Benjamin Rosenkrans. KRESGEVILLE—Robert Albert Christman. STROUDSBURG—Charles Stewart Flagler; Harry Sydenham Van Etten. SWIFTWATER—Richard Slee. TOBYHANNA—Alfred Lawrence Rhoads.

Montgomery County

ABINGTON—Harry A. D. Baer; Albert Nichols Baggs; Albert Vincent Crosby. AMBLER—Andrew Godfrey; Isaac High Shelly. ARDMORE—Herbert A. Arnold; James Harold Austin; Joseph Howard Cloud; Edwin Spooner Potter. BETHAYRES—Thomas Luther Coley. BRYN ATHYN—Charles Lewis Olds. BRYN MAWR—Henry Culps Earnshaw; Francis Betterly Eveland; George Henry Miller; William Chambers Powell; David Duer Reynolds. CHESTER—Clifford Hood Arnold. CONSHOHOCKEN—Aaron Leidy Ruth. CYNWYD—Edward Foulke Corson; Theodore LeBoutillier; Charles Williamson Luders. ELKINS PARK—Charles James Cole Jr. ERDENHEIM—William Coronado Sheehan. GLENSIDE—Elmer Ellsworth Wilson. HARLEYVILLE—Russell Raudenbush Keeler. HAVERFORD—John Semple Sharpe. HUNTINGTON VALLEY—David G. Harvey. JENKINTOWN—Richard Dale Hopkinson. KULPSVILLE—Henry Nathaniel Scholl. LANSDALE—John Warren Bauman. NORRISTOWN—Walter Allen Blair; Samuel Jaffe; James Aloysius McCracken; George Wm. Miller; Theodore Peters; Herbert Benjamin Shearer; John Christopher Simpson; Walter A. Yeakle. NORTH WALES—Frederick Blunt Allen. OGONTZ—Lawrence Hughes Bloom; Robert Shoemaker. POTTSTOWN—Barton K. Thomas; William A. Toland. ROYERFORD—Alexis Merritt Melvin. RYDAL—Frederick D. Owsley. SCHWENKVILLE—Henry Croskey Allen. WILLOW GROVE—Archie Wallace Dunn; William Henry Marburger Imhoff. WYNCOTE—Edward J. Gordon. WYNNEWOOD—Walter S. Lucas.

Montour County

DANVILLE—James S. Hammers; Raymond Jack Hauser; John Edmund Struthers.

Northampton County

BETHLEHEM—Geo. Lord DeSchweinitz; Thomas Benj. Kern; Stuart Emmart Rauch. EASTON—George Keyser Angle; Foster Aaron Beck; Francis Stapleton Chambers; Albert Knecht Detwiller; Rollo Howard Hoey; Harvey Claude Updegrove. HECKTOWN—Sem Grim Beck. PEN ARGYLE—William Earnest Andrew. SOUTH BETHLEHEM—Walter Joseph Cathrall; William Lawrence Estes Jr.; James Bertrand McAvoy; George Albert Parker; Norman Albertus Timmons.

Northumberland County

KULPMONT—Charles Culp Cooner; Raymond Clair Fagley. MT. CARMEL—Thomas James McNelis; Edmund Roger Samuel. NORTHUMBERLAND—Stoddard S. Berg. SHAMOKIN—Adna Sawyer Jones; Oscar Eisenhart Salter; Richard Henry Simmons; James Gardner Strickland. SUNBURY—George Albert Deitrick; Charles Meade Thomas. TREVORTON—Boyd Edwin Wilkinson.

Perry County

BLAIN—Harvey Wharton Woods. LIVERPOOL—George Henry Milton Bogar. NEW BLOOMFIELD—Maurice Isaac Stein.

Philadelphia County

BYBERRY—Abram Halprin. PHILADELPHIA—Alexander Crever Abbott; Frank C. Abbott; Lewis Harry Adler Jr.; Herman Emil Albrecht; Markley Connell Albright; Emory Graham Alexander; John Alexander; Herman Bryden Allyn; Robert Swan Alston; Andrew Anders; James M. Anders; Horace B. Anderson; William Honeyford Annesley; Harold Taylor Antrim; Thomas Morrel Armstrong; James Horatio Arnett; Joseph David Aronson; Edward L. Artman; Astley P. C. Ashhurst; William E. Ashton; Eugene Jacob Asnis; Joseph Aspel; George Mason Astley; James Paul Austin; Ira Ayer.

William Wayne Babcock; Harry Bachman; Benjamin F. Baer Jr.; George Frederick Baier Jr.; William Hotchkiss Bailey; Harry W. Baily; Matthew Carroll Barnes; Harold Frederick Baker; Frederick Baldi; James Harvey Baldwin; Chester Arthur Bardsley; Abrahm I. Baron; Samuel Baron; Charles Albert Barron; Frank F. Barthmaier; Othmar F. Barthmaier; Charles Orrin W. Bartine; Sidney E. Bateman; William Bates; Frank D. Baumann; William D. Baun; Edward J. G. Beardsley; Allen Garfield Beckley; Charles Augustus Behney; William Parks Belk; Basil Raphael Beltran; Franklin Duffield Benedict; Albert Pago Berg; David H. Bergey; Leo Heller Bernd; James Bebout Bert; John Allan Bertolet; John Percy Bethel; Sydney Geoffrey Biddle; Charles A. Bigler Jr.; Aaron Lafayette Bishop; James Douglas Blackwood Jr.; Julius Abraham Blasser; Frank Benton Block; George Homor Bloom; James Wiley Bodley; Arthur E. Bogart; John Waldo E. Boggs; Reuben Arnold Bogia; Russell Sage Boles; Zera Exley Bolin; Robert H. Bolling; Earl Danford Bond; Francis Frank Borzell; Frank Erdman Boston; Samuel Clifford Boston; Clement Remington Bowen; Charles Jacob Bowne; George Melick Boyd; Samuel Harold Boyd; Irvine Manning Boykin, Hugh Cotter Boyle; Charles P. Brady; John William Bransfield; William Ramsey Bready Jr.; William Cullen Bridges; Frank A. Bridgett; Ward Brinton; Randolph G. Broaddus; Ralph Shepheard Bromer; Macy Brooks; Harold Shoemaker Broomall; Benjamin Brown; George Andrew Brown; Henry Paul Brown Jr.; Franklin Cotton Brush; David Budin; Robin Carl Buerki; Frank Walton Burge; Joseph Patrick Burns; Michael Anthony Burns; Stillwell Corson Burns; Howard Sherwood Busler; Albert Butler; Benjamin Franklin Busby.

William B. Caldwalader; Raymond Flood William Campbell; Harris M. Carey; Harry Stober Carmany; Horace Leedom Carncross; John B. Carnett; Chapin Carpenter; John Baker Carson; Arthur E. S. Casey; Henry Ware Cattell; Burton K. Chance; William Herbert Chandlee; William Calvert Chaney; Samuel Chartock; Harry Norton Cherashore; Samuel Julius Chermaik; William Edgar Christie; Frederick David Clair; George Houghton Clapp; Jefferson H. Clark Jr.; Edward Lamar Clemens; Frank Cleveland; James Broomfield Clinton; Charles Higginson Cloud; Oscar Ray Clovis; Charles A. Codman; Leon Solis Cohen; Myer Solis Cohen; Isadore Franklin Cohn; Abraham Edward Colcher; Albert Newton Cole; Charles Aloysius Coll; Edward Wilson Collins; Joseph Francis Comerford; Alexander J. P. Conlen; Joseph Vincent Connole; John Michael Connolly; John Roy Conover; Philip Lewis Cook; Edwin Stanley Cooke; James Norman Coombs; Herbert Cooper; Donald Bruce Coover; Asa Fenton Copeland; William M. L. Coplin; Michael Patrick Corcoran; Walter Stewart Cornell; Clinton Franklin Costenbader; Alfred Cowan; William Vincent Coyle; William Frederic Craig; George Sumner Crampton; Joseph Raymond Criswell; Harry W. Croop; William Henry Crowley; John M. Cruice; Kirksey Louis Curd; John Dougherty Joseph Curran; John C. Da Costa.

Judson Daland; Walter John Daly; Adam Peter Dambrauckas; Clarence D'A. Daniels; Arthur Mansbach Dannenberg; Arthur Dare; Harold Stern Davidson; John Rumsey Davies Jr.; Edward Parker Davis; Richard Sharpless Davis; Alexander Heron Davisson; Arthur C. Dean; John B. Deaver; Percy De Long; Joseph William Dennin; Francis Joseph Dever; Robert T. Devereux; Henry Kuhl Dillard; Edward Saunders Dillon; Vincenzo Maria Diodati; John Leo Donahue; Daniel Joseph Donnelly; John Delvin Donnelly; Robert T. M. Donnelly; William Murray Donovan; George Morris Dorrance; Ernest Michael Dorsett; Rae Shepard Dorsett; William Drayton Jr.; Thomas William Druce; Amous Keeler Du Bell; Royal Elwood Durham; Guy Edward Dutton; Frank Moir Dyson.

Preston M Edwards; Thomas Ford Edwards Jr.; Paul C. Eiseman; Eldridge Lyon Eliason; Jacob Edgar Ellinger; John Dean Elliott; Walter Gray Elmer; William Cromwell Ely; Jacob L. Engle; Ralph L. Engle; Louis Daniel Englerth; George Alexander Enion; Erwin Huber Erney; Matthew Shayne; Robert H. Eshleman; Augustus Adolph Eshner; Omer R. Etler; William Julius Ezickson.

Clifford Bailey Farr; William Wilberforce Farr; Joseph Davidson Farrar; Leon Feldman; Vincent John Fenerty; Donald Renwick Ferguson; Francis Scoffin Ferris; Alfred Aloysius Ferry; Wilfred B. Fetterman; Alexander Garrison Fewell; Charles Andrew Fife; Cedrick Eugene Filkins; Harry Crawford Fish; Andrew Flanagan Jr.; John Bernard Flick; Clement A. Fogerty; Douglas Newton Forman; John R. Forst; Edgar Newton Fought; Charles Stewart Fox; Herbert Fox; Albert Philip Francine; Clarence Payne Franklin; Charles Harrison Frazier; LeRoy Walley Frederick; Frank E. Freeman; Michael Freeman; Leonard David Frescoln; Charles J. Fries; Irvin Augustus Fries; Victor B. Fries; Charles Leroy Fulmer; Charles Lincoln Furbush; Milton H. Fussell.

John Patrick Gallagher; Sigmund Leon Gans; Henry Kennedy Gaskill; Arthur H. Gerhard; William Francis Gerhart; John H. Gibbons; Burgess Allen Gibson; Ben Clark Gile; Gershon Ginsburg; Jack Claxton Gittings; Ellis Edgar Willlis Given; Edward B. Gleason; Henry Granville Godfrey; Maurice Goldberg; Nathan Ralph Goldsmith; Jacob S. Goldstein; Edward H. Goodman; Harry William Goos; Amos Wilson Gottschall; Francis Vincent Gowen; Charles Prevost Grayson; Harrison Adams Greaves; Toby Anthony Greco; Sigmund S. Greenbaum; Frank N. Greene; Robert Bruce Grimes Jr.; Malcolm Cummings Grow; William F. Guilfoyle Jr.; Bruce Hetrick Guistwhite; Frank Bold Gummey.

Hervey Martin Hagedorn; John E. Haigh; John B. Haines; Charles Townsend Hamaker; Percy Gatlin Hamlin; William Hannum; James Clayton Harding; Hobart Amory Hare; William John Harrison; Richard Hickman Harte; Arthur Hartley; John Calvin Hartman; Wilfred Wetherill Hawke; David Bittle Hawkins; Arthur Winfred Hebert; William Frederick Hebsacker; Henry Hellemann; Edward Peter Heller; Isidore Hendel; Ira M. Henderson; John N. Henry; Charles Albert Hensley; John Frederick Herbert Jr.; Ray Russell Hetherington; William Hewson; Harry Z. Hibshman; Richard Franklin Hill; William Marshall Hinkle; Drury Hinton; Otto Christian Hirsch; Edward B. Hodge; Charles Biddle Hollis; William Clarence Hollopeter; Thomas B. Holloway; Frederick Miller Hopkins; Ulrich Peter Hörger; Daniel M. Hoyt; Francis Russell Hoyt; Charles Ralston Hughes; John Elias Hume; Charles Jack Hunt; Robert John Hunter; Frank Humbert Hustead; James Pemberton Hutchinson.

Henry B. Ingle; Horace Wesley Jack; Thomas Wright Jackson; Leopold Max Jacobs; Rutherford Lewis John; Elmer Ellsworth Johnson; Lloyd William Johnson; William N. Johnson; Isaac Hampshur Jones; John F. X. Jones; John H. Jopson Jr.; William Michael Joyce; Henry Draper Jump; John D. Jungmann.

Edwin Jacob Kalodner; Clinton Austin Kane; Leo Anthony Kane; Howard Francis Keating; Joseph Clarence Keeler; William Williams Keen; Andrew Joseph Keenan Jr.; Floyd Elwood Keene; Robert Andrew Keilty; Elmer Edgar Keiser; Francis Joseph Kelly; Thomas M. Kelly; Edgar William Kenner; John Pressly Kennedy; William F. Kennedy; Joseph Miller Kenworthy; William Conrad Kessler; Baldwin Longstreth Keys; George Christopher Kieffer; Ralph Dunleavy Killen; Joseph Victor Klauder; Thomas Klein; William Oscar Kleinstuber Jr.; Oram Roscoe Kline; Austin F. Klutz; I. Warner Knight; Frank Crozer Knowles; Andrew Knox Jr.; Carl Frederick Koenig; David Warren Kramer; Edward Bell Krumbharr; Karl John Kurz.

John M. LaFerty; Heilner Maxwell Langdon; Daniel Joseph Langton; Ernest Laplace; Octavus P. Large; Joseph Roscoe Latham; Jackson S. Lawrence; George Malcolm Laws; La Barre Jayne Leany; Frederick Headley Leavitt; Robert Le Conte; Walter Estell Lee; John Leedom; Clarence Fontains Maury Leidy; Joseph Leidy; Samuel Leopold; Simon Stein Leopold; William Walsh Lerman; James Walter Levering; Abram Levy; Frank David Levy; Clarence J. Lewis; Paul A. Lewis; Jay Dever Linton; Louis J. Livingood; Walter R. Livingston; Charles Elroy Llewellyn; Edwin P. Longaker; Horace George Longaker; Hiram R. Loux; Baldwin H. Edward Wilhelm Lucke; Robert McDowell Lukens; Clifford Bell Lull; John J. Lynch; William Joseph Lynch; Bethuel B. Vincent Lyon.

Douglas MacFarlan; Anthony S. Maciejewski; William Herbert Gordon Mackay; Charles Francis Mackel; Arthur L. MacKenzie; Louis Mackler; William Joseph MacMurtrie; Charles Percy Major; Jacob L. Manasses; Willis Fastnacht Manges; Vincent Marcucci; Jacob K. Marks; Alexander Tertius Martin; Edward Martin; James R. Martin; Wallace Marsh Martin; John Peter Maus; Cornelius Theodore McCarthy; Daniel Joseph McCarthy; Edward W. McCloskey; John Francis McCloskey; Robert S. McCombs; Albert McConaghy; James Collier McConaughey; Grayson Prevost McCouch; Francis Joseph McCullough; John Harvey McCutcheon; Morton McCutcheon; James Edward McDowell; Joseph McFarland; George Edward McGinnis; Joseph Aloysius McGinnis; Charles Steim McGivern; Benjamin Meredith McIntire; William Page McIntosh; Robert Boyd McIver; John Joseph McKenna; Benjamin Whitehead McKenzie; Howard Allison McKnight; John Douglas McLean; Thomas M. McMillian; James William McMonagle; Richard Langdon McNeer; John E. Medley; Theodore Melnick; William Jackson Merrill; Washington Merscher; David Gregg Metheny; Samuel Alexander Sterrett Metheny; Harry Philip Metzger; Julian Erdreich Meyer; Henry B. Mikelberg; Charles Scott Miller; Morris B. Miller; Richard Jonathan Miller; Robert Lee Miller; Thomas Grier Miller; Thomas David Mills; George S. Mintzer; Joseph Myers Mirman; Albert Graeme Mitchell; Charles F. Mitchell; Henry Keller Mohler; Charles Mortimer Montgomery; Allen H. Moore; Charles H. Moore; Edward Kemp Moore; Eugene Aloysius Moore; Philip Henry Moore; Sterling Walker Moorhead; Arthur Caradoc Morgan; Marshall Blair Morgan Jr.; Samuel M. Morse; William Francis Morrison; Dudley Jay Morton; Percy Daniel Moulton; Donald Grosch Moyer; Henry G. Munson; James Gordon Murfin; Douglas Power Murphy; Eugene Clement Murphy; Frank Geo. Murphy; Francis Herron Murray; John Herr Musser Jr.; Dennis Alexis Myers.

Charles Francis Nassau; Gilbert Newburger; William Steel Newcomet; Arthur Newlin; William Nichols; William Garrison Noe; George W. Norris; Philip Norris; Charles Quay North.

John Patrick O'Brien; Andrew Allison O'Daniel; James Marye Odell; Thomas Ignatius O'Drain; Herbert Old; Abraham E. Oliensis; Joseph Francis O'Neill; Charles Aloysius O'Reilly; Abraham Maurice Ornstein; Alfred James Ostheimer; George Whitney Outerbridge; Hubley Raborg Owen; Richard Owen.

Francis R. Packard; Robert Paine; Charles S. Pancoast; Benjamin D. Parish; John Fisk Park; William N. Parkinson; Clarence Anderson Patten; Ross Vernett Patterson; James Hale Paul; John Davis Paul; Jacob Pearl; Ralph Pemberton; John Pennington; Oliver Hazard Perry Pepper; William Pepper; John Douglas Perkins Jr.; Joseph Ashbridge Perkins; William Harvey Perkins; Joseph Anthony Pessolano; Frederick Chalfonte Peters; William Francis Peters; Orlando H. Petty; Damon Beckett Pfeiffer; Horace Phillips; Henry Leon Picard; George Morris Piersol; Charles Edward Pike; Albert Pilkington; George Platt Pilling Jr.; Edmund Brown Piper; Michael Platt; Eli Harmon Porch; Joseph Walter Post; William Courbet Thomas Poulson; Marion Henderson Powers; Malcolm L. Pratt; Reginald Lloyd Prees; George Elmer Price; Solomon Winfred Pleicaux; Linnaeus Hodgson Prince; Walter William Propst; John Purdy; George Morehouse Purves.

William Elkin Raken; Frank McCracken Ramsey; Alexander Randall; Edward Randall Jr.; John Herbert Reading Jr.; Howard Reed; Robert Pierson Regester; Martin Emil Rehfuss; Stanley Philip Reimann; Sidney Joseph Repplier; Charles Barnett Reynolds; John Henry Wallace Rhein; Solon Lafayette Rhode; Booker E. Rhudy; Joseph Francis Richards; David Riesman; Harvey M. Righter; Linwood Layton Righter; Walter Bright Rile; Grady Rudisill Roberts; Benjamin Robinson; George Ernest Robinson; John Agustus Roddy Jr.; Edwin William Rodenheiser; John S. Rodman; Harry Frank Roepke; Philip S. Rosenblum; Thomas C. Ross; Charles Selmer Rottner; James T. Rugh; William Ruoff; Eugene

Rush; Carlton Nelson Russell; Jacob James Rutberg; William Cyril Ryan.

Joseph Sailer; Charles Dudley Saul; John Shelley Saurman; Edwin Stanton Saylor; Leo Francis Scanlan; Charles Solomon Schafer; James Evans Scheehle; Truman Gross Schnaber; Joseph Henry Schoenfeld; Guy Daniel Schoonmaker; Edward Aamin Schumann; George Jacob Schwartz; Frank William Schwartz; Charles Schwinn; Louis Segal; Morris Segal; James Stuart Seitz; Louis Seligman; Lemuel Taylor Sewell; Charles Emory Gould Shannon; Francis Patrick Shannon; Hugh Murdoch Shannon; Morris Samuel Shapiro; Abraham Maxwell Sharpe; William Ker Shea; Philip Atlee Sheaff; James A. Shelly; William Smith Shimer; Vincent Talbott Shipley; William Toy Shoemaker; Furman Robbins Shute; Edward Rufus Sibley; Alvin Siegel; Samuel Singer; Elijah H. Siter; Penn Gaskell Skillern Jr.; Ross Hall Skillern; Samuel Ruff Skillern Jr.; Alexis Dupont Smith; Allen J. Smith; Arthur Donaldson Smith; Barney Barr Smith; Mieczyslaw Edward Smoczynski; George Couch Snead; Raymond Lock Sommers; Louis A. Spaeth; John Speese; Robert Douglas Spencer; Israel Spiers; Ellis Meyer Spoont; Samuel Stalberg; Camille Joseph Stamm; Daniel E. L. Stedem; Edward Maples Steger; Edward Austin Steinhilber; Charles G. Steinmetz Jr.; Thomas Cook Stellwagen Jr.; Alfred Stengel; George L. Stephan; Charles Midwood Stiles; Francis Augustus Stiles; Cheney M. Stimson; Carl Stoepler; William Hoy Stoner; Edwin G. Stork; Albert James Storm; Philip Samuel Stout; Edward Adam Strecker; Charles M. Strotz; William Daniel Stroud; Ashbury Clarke Stroup; Samuel Booth Sturgis; Roy Dewitt Sumner; William Blaine Swartley; Joshua E. Sweet; William M. Sweet; William M. Sylvis.

Charles Hill Tait; James E. Talley; John D. Target; Isaac Samuel Tassman; William J. Taylor; Frank Wister Thomas; Thomas Turner Thomas; William H. Thomas; Ross H. Thompson; William LeRoy Thompson; Morris Clayton Thrush; Morris Hancock Tindall; John Hart Toland; Joseph James Toland Jr.; James Francis Tompkins; John A. Topper; Eugene W. Torrey; Abraham Trasoff; Phillip Adam Trau; Stuart Trowbridge; Henry Tucker; Stephen Wilner Tunnell; Joseph Turner; George Kay Tweddel; Everett Allen Tyler; Ralph McGuire Tyson.

Harry Edward Ungerleider; George Milton Underwood; William Penn Vail; Claire F. Vale; Warren Van Derveer; William W. Van Dolsen; William Van Korb; Julius Richardson Vann Jr.; John Adams Van Valzah; Louis Charles Vattier; Norris Wistar Vaux; Henry Christian Viereck; Adolph Emil Voegelin.

Herschell Cary Walker; Thomas Holmes Walker; Warren Walker; Adolph Augustus Walkling; George Bush Walp; William Henry Walsh; Rudolph Albert Walther; John Francis Watkins (col.); Charles James Watson; William Newbold Watson; Charles Channing Watt Jr.; Robert Watt; Abe Kipp Weaver; Charles Henry Weber; John Malcolm Weber; Edward Weiss; William Weiss; John Murray Welch; James Ralston Wells; John Wilson West; William Francis Whelan; William Whitaker; Howard King White; Hilton Addison Wick; Henry Wilderman; Louis Russell Wiley; DeForest Porter Willard; Horace James Williams; Philip Francis Williams; Ernest Gotshall Williamson; Harry Bond Wilmer; George Wilson; Samuel Milliken Wilson; Sydney Louis Wingrade; Russell Garth Witman; Paul Carl Wittman; John Bloss Wolfe; George Bacon Wood; Walter A. Wood; Alan Churchill Woods; Arthur Roy Woods; John H. Woolridge; Lester Elgin Woomer; Whittier Howard Wright.

Arthur Wells Yale; Joseph Charles Yaskin; Louis Brinton Yerger; Charles Houston Young; Carl Crossman Yount; Myron Albert Zacks; Arthur John Zimlick; Jay Donald Zulick.

PHILADELPHIA—Mortimer Warren Blair; Josiah Travilla Bunting; Jacob Morris Cahan; Claude Edward Case; Henry Carl Sangree; Stephen Dana Weeder.

Potter County

COUDERSPORT—Philip Luther Hatch; Ross H. Jones. GALETON—Hal Albert Laye. SHINGLEHOUSE—Robert Mayne Richards.

Schuylkill County

ASHLAND—Jonathan C. Biddle; Robert McReynolds Biddle; Rudolph Adam Constien; John Louis Hoffman; William Harrison Leffler; Harry Harrison Lewis; James Purdy Roth. COALDALE—William Henry Clewell. CRESSONA—George Oliver Oscar Santee. FOUNTAIN SPRINGS—Albert Wellington Fisher; Edward Earl Marsh; Roscoe Frederick Mauser; James Jos. Monahan; Joseph Harrison Wyatt. FRACKVILLE—John Joseph Donohue. GIRARDVILLE—Michael George Dewey; William Joseph Monaghan. HECKSCHERVILLE—John Joseph Sweeney. MAHONOY CITY—Joseph Francis Dolphin; Ivor David Fenton. MANILA—Benjamin F. Fridge Jr. NEW RINGGOLD—Henry Bley. PT. CARBON—John Wesley Conrad. POTTSVILLE—Alfred Morton Bergstein; Gouverneur Boyer; Alexander Liddell Gillars; James Beyel Heller; Michael Joseph McCarthy; John J. Moore; Lewis Mayer Shultz; John George Striegel; Charles V. Wadlinger. SHENANDOAH—Joseph John Austra; John C. Miller; Leo Thomas Mullahey; William John Reddy. TAMAQUA—Arthur Bowles Fleming; Frederick B. Harding; Oliver Kidwell Speer. TOWER CITY—David Jackson Hawk. TREMONT—Thomas Lawrence Doyle; Theodore Charles Fegley; Joseph Timothy Murphy; Arthur Elmer Simonis.

Snyder County

FREEBURG—Dwight Elmer Long. SELINSGROVE—Elmer Raymond Decker; Latimer Small Landis. SHAMOKIN DAM—Charles Napoleon Brostus.

Somerset County

BERLIN—Harry Glenn Eskin; Gustave Gordon Kalmutz. GARRETT—Wallace Roy McClellan. SOMERSET—James Earle Dull; John H. Ross Heminger; Snyder John Henry Louther; Fred B. Shaffer. WINDER—Bart James Smith.

Sullivan County

HILLSGROVE—James Sherman Mosher. MILDRED—James Joseph O'Connor.

Susquehanna County

BROOKLYN—Thomas Oliver Williams. FOREST CITY—Davis Reese. HARTFORD—Franklin Chapman Hill. NEW MILFORD—William Edwin Park. SUSQUEHANNA—Arthur John Denman.

Tioga County

BLOSSBURG—Edward McIntyre Haley. LAWRENCEVILLE—Elmer John Presper. LEETONIA—Michael Richard Long. MANSFIELD—John Horton Doane. TIOGA—Fay Xavier Field; Lee Westlake Hughes. WELLSBORO—Francis S. Bodine.

Union County

ALLENWOOD—Norman Robert Davis.

Venago County

DEMPSEYTOWN—Audley Weller Ricketts. FRANKLIN—Ardus Clair Thompson; Clyde E. Tibbens. OIL CITY—Elmer Llewellyn Dickey; Edward Glenn Henry; Phillip Joseph Sheridan. POLK—Norman Stewart Reed.

Warren County

CLARENDON—William Patrick Clancy. COLUMBUS—Roy Clark Meals. SUGAR GROVE—George Monroe B. Bradshaw. WARREN—George Smith Condit; William Cleveland Miller; Melbourne Jabez Pond; Paul Bryant Stewart. YOUNGSVILLE—Frank Camden Willard.

WARREN—Ira Alphonse Darling.

Washington County

CANONSBURG—David Major Bell; Louis De Haven Donaldson; Esten Luellen Hazlett. CHARLEROI—Edwin McKay; Harry Joseph Repman. CLAYSVILLE—Elbin Jordan Johnson. DONORA—Torrence John Hanlon; John Joseph Kolski. ELLSWORTH—William Lester Botkin; Samuel Alden Kamerer. MARIANNA—Freeman Floyd Cobb. McDONALD—William S. Stewart. MONONGAHELA—Harry Francis Bailey; George Kennedy Hays; C. Francis Linn; Porter Morrison Wall. VESTABURGH—Perry Clare Smith. WASHINGTON—James Lennon Brennon; Robert Arthur Knox; Homer Persell Prowitt; Stacy Herman Rinehardt; Walter Black Rogers; Richard Austin Stewart. WEST BROWNSVILLE—Howard Lester Farquhar. WESTLAND—Walter J. Shidler.

Wayne County

HAMLIN—Oscar James Mullen. HAWLEY—Frederick Anthony Lobb. HONESDALE—William Thomas McConville.

Westmoreland County

ALVERTON—George T. McNish. BOLIVAR—Charles S. Hendricks. BRADENVILLE—James Willard Stillimann. CLARIDGE—Harry Joseph Stockberger. DERRY—Charles C. Crouse; Floyd D. Lohr. GREENSBURG—Louis John Carrick Bailey; Hugh Bailey Barclay; Lawrence Leonard Blackburn; Walter Michael Bortz; Thomas Porter Cole; Robert Jones Hunter; Claud Worth McKee; Dennis Ray Murdock; Irwin J. Ober; Carl Freeman Pierce; William Joseph Potts; Charles Robert Reiners; John Johnson Singer. HANNASTOWN—Adam Seanor Kepple. JEANNETTE—William Trall Doncaster; Charles Archie Goble; Urban Henry Reidt; Clarence Glenn Robinson; Lee Monte Sankey; Robert Lewis Wilson. LATROBE—Nicholas E. Abbaticchio; Arthur Byron Blackburn; Garnett P. Morison; Stephen William Nealon; Bert Frank Ober; Le Roy Allen Scholl. MADISON—Charles McLaughlin Sloan. MONESSEN—Ralph Edmund Conn; Clifford Farquhar; William David Hunter; Edgar Blackburn Sloterbeck; Arthur Raymond Wilson. MT. PLEASANT—John Lewis Burkholder. NEW KENSINGTON—John Walter Goodsell; Frank Clark Katherman; George Lawrence Kreiger; William Patrick Nolan; Warren Thomas O'Hara; Elmer Noah Piper; Frank Edwin Smith; J. F. Marchand Snyder; Lyden Frederick Wilson; Michael M. Wolfe; Raymond Alvin Wolff. RUFFSDALE—Charles Henry Poole. SCOTTSDALE—Samuel Brown Gray; David Ernest Griffith. SOUTHWEST—David Allison Walker. TRAFFORD—Frank Milton Pogue. UNITED—Martin Wesley Freas. VANDERGRIFT—Walter J. Lace. VANDERGRIFT HEIGHTS—William Armor Copeland. YUKON—Howard Bassett Emerson.

Wyoming County

MESHOPPEN—Asa Lee Hickok. NICHOLSON—VanCleft Decker.

York County

DALLASTOWN—Clarence Wilson Frey. DILLSBURG—William L. Crawford. EAST PROSPECT—Serrel Roscoe Hanigan. ETTERS—Sylvia Jeremiah Roberts. FAWN GROVE—Samuel Winchester Reeves. GLEN ROCK—Jeremiah Fletcher Lutz; Pius Albertus Noll. NEW FREEDOM—Stewart Cole Bowers. YORK—John H. Bennett; John Gilbert; Robert Hostetter; Charles Henry May; Joseph Stanley Miller; Brantly Fuller Parker; Harry Malcolm Read; William Heinly Schellhamer; Arthur Blair Shatto; Gibson Smith; Harry David Smyser; James Elwood Throne; Louis Schneider Weaver; Francis Roman Wise.

YORK—Lawton Mervale Hartman Jr.

SUMMARY OF STATE TABLES

STATE	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.	Percentage of Physicians Who Hold Commissions
Alabama	51,279	20.3	2,307,304	913	2,525	5	1,568	2,046	1,706	330	13.1
Arizona	97,395	294.2	263,788	797	331	9	211	274	189	76	23.0
Arkansas	52,525	20.3	1,776,475	687	2,587	18	1,282	1,849	887	202	7.8
California	155,652	28.8	3,038,322	563	5,396	446	2,956	3,698	2,736	728	13.5
Colorado	119,785	70.9	1,014,178	600	1,689	99	739	1,164	841	185	10.9
Connecticut	4,820	2.8	1,334,864	795	1,679	63	948	1,299	1,055	261	15.5
Delaware	1,965	7.7	234,819	924	254	5	120	172	103	32	12.6
District of Columbia	60	0.05	369,282	300	1,230	64	817	951	641	216	17.6
Florida	59,396	46.2	1,031,372	803	1,283	29	738	998	568	213	16.6
Georgia	60,610	17.3	2,875,205	837	3,436	17	1,956	2,757	1,551	432	12.6
Idaho	83,303	185.5	448,577	999	449	9	262	366	156	70	15.6
Illinois	56,043	5.1	6,265,789	574	10,909	596	5,530	8,151	6,213	1,533	14.0
Indiana	36,045	7.5	2,914,193	611	4,763	135	2,106	3,109	2,591	529	11.1
Iowa	55,587	13.9	2,476,526	618	4,004	107	1,775	3,156	2,595	454	11.3
Kansas	81,774	30.6	1,888,868	707	2,668	51	1,345	1,904	1,491	382	14.3
Kentucky	40,664	11.7	2,425,466	696	3,483	63	1,801	2,587	1,983	454	13.0
Louisiana	48,613	24.0	1,864,534	920	2,025	24	1,259	1,760	1,002	281	13.9
Maine	28,895	24.5	794,216	673	1,179	27	544	833	865	164	13.9
Maryland	9,641	4.2	1,409,415	621	2,268	71	1,269	1,727	1,088	403	17.8
Massachusetts	8,039	1.36	3,929,784	669	5,870	403	3,410	4,325	3,403	791	13.5
Michigan	57,480	12.5	3,458,185	752	4,598	185	1,844	3,434	2,810	665	14.5
Minnesota	80,856	31.7	2,286,341	884	2,584	57	1,454	1,992	1,621	416	16.1
Mississippi	46,825	23.7	1,994,685	1.009	1,975	15	1,231	1,527	985	260	13.2
Missouri	68,664	11.3	3,537,819	583	6,063	156	2,956	4,375	3,136	699	11.5
Montana	240,150	363.3	472,987	715	661	24	439	560	328	121	18.3
Nebraska	75,533	48.3	1,295,896	828	1,565	64	1,020	1,557	1,173	312	19.9
Nevada	116,941	769.3	111,284	732	152	4	82	123	86	31	20.4
New Hampshire	9,031	13.3	445,613	677	657	37	270	456	502	92	14.0
New Jersey	7,514	2.5	3,119,558	1,024	3,046	147	1,747	2,489	1,721	518	17.0
New Mexico	108,940	238.9	349,920	767	456	8	242	363	224	60	13.1
New York	47,661	3.0	9,321,431	587	15,877	619	8,552	12,255	8,324	2,583	16.3
North Carolina	49,370	22.1	2,433,782	1,087	2,237	21	1,251	1,706	1,284	340	15.2
North Dakota	73,525	121.7	664,607	1,100	604	7	429	540	408	100	16.5
Ohio	40,750	5.2	5,261,587	673	7,821	218	3,626	5,699	4,758	1,001	12.8
Oklahoma	70,069	26.6	2,315,180	866	2,672	47	1,366	2,001	1,432	377	14.1
Oregon	97,757	86.8	862,239	764	1,128	80	591	901	562	203	18.0
Pennsylvania	44,831	3.9	8,783,728	761	11,539	518	6,190	8,324	6,750	2,022	17.5
Rhode Island	1,067	1.4	631,505	832	759	22	419	623	408	106	14.0
South Carolina	31,115	25.1	1,646,615	1,331	1,237	9	690	950	692	204	16.5
South Dakota	80,246	124.4	597,331	924	646	16	335	513	372	92	14.2
Tennessee	53,282	15.3	2,238,729	646	3,481	20	1,733	2,235	1,660	444	12.7
Texas	259,862	41.6	4,557,957	730	6,236	74	2,871	4,039	3,731	788	12.6
Utah	82,184	172.3	441,746	932	477	17	298	417	260	75	15.7
Vermont	9,129	14.2	368,260	576	639	11	288	453	377	86	13.4
Virginia	40,262	16.0	2,023,600	806	2,509	37	1,411	1,551	1,971	394	15.7
Washington	66,836	39.9	1,558,808	956	1,673	72	899	1,334	974	284	17.0
West Virginia	24,024	13.7	1,420,151	807	1,759	23	994	1,394	1,070	213	12.1
Wisconsin	55,238	20.2	2,536,091	911	2,783	101	1,485	2,119	1,818	446	16.0
Wyoming	94,490	372.0	141,705	557	254	14	152	199	138	24	9.4
Totals	3,085,823	21.4	106,543,317	739	144,116	4,864	75,498	107,255	81,239	19,692	13.7

The fifth column shows 144,116 physicians in the United States. These figures are taken from the galley proofs of the new edition of the American Medical Directory, still in process of compilation, and do not include officers of the Medical Corps of the Army or Navy. It is estimated that the new directory will show a slight increase over the preceding one, or 145,000.

The population is based on the 1917 estimate made by the Bureau of the Census for use in connection with the Selective Service.

The tenth column gives 19,692 as the number of physicians who have been commissioned. As stated in the introductory, these figures do not include those who have been offered commissions but who have not yet accepted them, or whose acceptances have not been reported to this office. Neither, of course, does it include those whose applications are pending. We estimate the total of these two classes at about 2,000.

THE PENNSYLVANIA MEDICAL JOURNAL

Official Organ of the Medical Society of the State of Pennsylvania

VOLUME XXI
NUMBER 10

ATHENS, PA. JULY, 1918

SUBSCRIPTION:
$2.00 PER YEAR

ORIGINAL ARTICLES

MALIGNANT DISEASE OF THE THROAT*

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An attitude of deepest gloom seems to prevail both with the profession and with the public in regard to malignant disease. A certain degree of pessimism is normal in a matter of such moment and such uniform discouragement to the human race, but it seems within the last few years to have grown almost or quite to a phobia. A certain veteran practitioner and consultant, in commenting on this deplorable attitude of the public and the profession, said to me that it was much more marked now than it was ten years ago, and that the average physician is so convinced of the utter impotence of not only his own efforts, but those of the profession generally, in the control of malignant disease that the appearance of a case automatically exerted a baleful hypnotic influence. It is undoubtedly true that some of us, instead of making a diagnosis and facing the matter with the patient, feeling as we do the hopelessness of the situation, smooth matters over, allay apprehension and invite delay, an invitation all too welcome to the uneasy patient. A period of self-deception is then indulged in by both physician and patient. Precious time is lost and so the ravages of malignant disease increase year by year.

Now I am not able to state of my own knowledge that the attitude of the profession on this important subject is any worse at the present time than usual but, if so, I believe it to be so because of the abortive propaganda that flourished six or seven years ago. Public meetings were held with the laity much in evidence. Funds were solicited, lectures given, and the public and her physician led to believe that great achievements were in the making. The old idea of depending on operation early and often was wrapped in tin-foil, not by direct word, but by planting the expectation that something much better was available. This new something was radium and the laity calmly sat back and waited for malignant disease to vanish in the wake of malaria and smallpox. Then a period of disappointment or partial success and finally the public press announces that radium is a failure. The reading public believe such to be the case, but do not show any haste in returning to surgery in a hopeful frame of mind.

During the past two years I have seen forty-six cases of malignant disease of which only eight were operable, and some of these perhaps not properly so. A good many of these forty-six had been under their physician's care for weeks or months and had been treated for simple or specific ulcerations or swellings. A considerable number had not consulted a physician until driven by pain, or stench, or hemorrhage.

CASE 1.—Mrs. H. presented herself for diagnosis having a large swelling on the left side of the neck below the angle of the jaw; her left eye protruded and was displaced outwardly; the nose was completely obstructed. She complained of dysphagia and pain in face and head. Her first symptom, nasal obstruction, was noticed five weeks before. For this she had a turbinotomy performed by a local physician, but experienced relief for only a short time. She returned to him and he operated a second time. From the second operation she received no relief and within a few days she noted failure of vision and protrusion of the eye; pain developed and became very distressing. The swelling in the neck appeared two weeks before her visit to me and had increased with amazing rapidity. A frozen section of a piece of tissue from the nose confirmed the suspicion that the growth was carcinoma. Death ensued in a few weeks.

An interesting contrast to Case 1 is the following:

CASE 2.—J. J. R., aged 45, was referred to me at Mercy Hospital by Dr. J. J. Buchanan. The patient had noticed a swelling in the left pharynx four and one-half months before but had not consulted a physician, though suspecting the condition to be cancer. He finally came because of dysphagia and pain in throat and ear. His breath was very offensive. His left tonsil and pharynx were the seat of a large sloughing carcinomatous mass. The glands of the neck on the affected side were enlarged and hard.

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* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 27, 1917.

I concurred in the opinion that the case was inoperable and referred him to Dr. R. H. Boggs for radium treatment, thinking it might relieve pain and dysphagia. Dr. Boggs accepted the case with the same idea. After a few weeks of the treatment I noticed a marked reduction in the size of the growth, the fetid odor was gone and the pain and dysphagia had disappeared. He was gaining in weight and said he was going to get well. Dr. Boggs began the use of the Coolidge tube in conjunction with radium, with the remarkable result of a healed throat, disappearance of the enlarged glands. The patient resumed his vocation and when last seen, two years after the beginning of his treatment, had had no recurrence.

Case 3.—Mrs. C. H., aged 60, complained in July, 1916, of a persistent hoarseness and occasional pain in the larynx. She had received local and medical treatment for some weeks without improvement. Examination revealed a small sessile growth on the left vocal cord. This was removed July 15 by the endolaryngeal route. The wound healed nicely and the hoarseness disappeared. The pathological report showed it to be a squamous celled cancer, and her physician, Dr. Snyder, and I advised a course of Coolidge tube treatment and arranged with the patient that at the first sign of recurrence she was to return for a thyrotomy, assuring her that by an early operation sufficient tissue could be saved to preserve a practical voice. She underwent a short course of treatment with Dr. R. H. Boggs, and progressed favorably until September, when she went to a sanitarium in Michigan for treatment of her nerves and stomach. Independent of us she also had an examination and treatment of her larynx. The physician is said to have advised her that her larynx was normal, that she had no cancer, that in his opinion she never had had one, and that she should go home and forget it. She came home but her hoarseness returned and she could not forget it. I saw her in October, diagnosed an early recurrence and in accordance with our original plan tried to induce her to go direct to the hospital for a thyrotomy. She urged her doubt as to the correctness of the diagnosis and refused. On November 26 she returned to me complaining of severe dyspnea and dysphagia. The larynx was practically occluded by a carcinomatous mass involving the whole left side and right arytenoid. The glands along the trachea were not palpable. I did a tracheotomy and later proposed to do a laryngotomy. This was refused on the ground that probably the sanatorium doctor was right, and because we could not promise her a voice. She returned home and died some weeks later, a sacrifice, I believe, to flippant advice, based on a perfunctory examination and made authoritative by august surroundings.

Case 4.—On June 16, 1916, Mr. A. D., aged 67, was referred to me by Dr. R. H. Boggs for operation. He had been under treatment by means of radium and roentgen ray for some time and had made some progress, but of late had ceased to respond satisfactorily. Examination revealed an infiltrating ulcerated mass in the left side of the throat, involving the tonsil, side of the tongue, and the mandible at the site of the third molar. An operation was done on June 19, removing the tonsil and pillars, a portion of the mandible and a portion of the tongue. The operation was followed by further treatment by Dr. Boggs. The pathological diagnosis was squamous carcinoma. The patient is alive and well.

I have recited these few cases as illustrative of professional and lay practice and attitude, and to a certain degree of the value of the different methods of treatment.

The value of surgical treatment is well known and needs no defense. To increase its value many times over it is only necessary to speed up the average date of diagnosis two months. A localized process in a fairly favorable location is generally amenable to surgery alone.

The same is true also of the chief nonsurgical treatment, viz., radium, and the Coolidge tube, for both of which I entertain the highest regard, especially when employed as an adjunct to surgical treatment, though as I have shown they are sometimes able to carry off the palm alone. The hysterical attitude with which radium has been introduced is most regrettable but unavoidable. The lure of its intrinsic value, wonderful physical behavior and proposed uses made it the certain spoils of the feature writer and the professional faddist, coming and going. Radium fills a large niche in therapeutics and in my opinion it will ultimately fill a much larger.

What we need now is not new lines of treatment but a little better use of what we have. To use better what we have we must begin early. And to begin early we must get the public and the family physician to take a hopeful interest in malignant disease. A great deal more is known about it now than five years ago. Some wonderful cures have been made and the solution of the mysterious phenomena of malignant disease will finally be found, through the accumulated knowledge gained by handling a great many cases from incipiency to death or cure. If we wish to hasten this solution each and every physician should initiate a campaign of education among his patients, holding to the hopeful side and encouraging prompt examination of all abnormalities, and in the rôle of examiner his sense of responsibility should be most keen, since life is at stake.

Keenan Building.

DISCUSSION

Dr. Chevalier Jackson, Philadelphia: I can find serious fault with Dr. Dickinson, but not with his paper. The fault I have to find with him is that he does not give us a paper like this oftener. It is as sparkling and crisp as a new greenback, and it is a shame that his vast experience does not get into medical literature.

Case 2, regarded as inoperable by Dr. Buchanan, coincides with my experience. When we find a lesion in that region that has spread to all the deeper tissues of the neck and all the lymphatics are involved, my experience is that an esophagoscopy will show that there is also an involvement of the mediastinal lymphatics, which, of course, cannot be removed. The fact that the case was cured afterward by the roentgen ray and radium is a very remarkable thing, and corroborates what has happened in quite a number of cases. It remains to be determined which cases will be cured by radium and the roentgen ray, and those that are not amenable. Personally, it has seemed to me that in the cases that I have seen of my own and in consultation with others, the cases in which radium exerted its best effects are in patients not too old and feeble. For its best effect it seems to require some resistance on the part of the patient. The old, feeble cachectic patient will average a very low percentage of cures. That may be proven or disproven by wider experience. The trouble has been that it has been in only comparatively recent years that anybody has had radium enough to do more than irritate the growth.

Case 3 is such an old story in the experience of all of us that it makes me very much discouraged with the whole subject of malignant disease. When Dr. Dickinson had removed the growth and got the patient clear of all symptoms, he knew the danger of recurrence. He prepared to do a thyrotomy, which in that kind of a case would yield a cure in 85 per cent. of the cases of growths in that location at that stage; but the patient hunted for someone who would tell him the growth is not malignant. There remain a few practitioners, who, when a malignant case gets well, doubt the diagnosis. It was the same years ago with tuberculosis. When the profession had the idea of "consumption," a cured case of pulmonary tuberculosis was told: "You never had any consumption."

Case 4 struck me as being exceedingly interesting. It was not doing well under the radium alone. It did well under the radium and the ray after the surgery. It points clearly to the fact that we have much to learn about radium and its effects. Some day after we have available statistics on tens of thousands of cases we will be able to determine why it is that in some cases surgery will be followed by prompt recurrence and be cured by radium, and in other cases radium will have no effect, but we have abundant evidence that radium has some deterrent effect in preventing a recurrence after surgical removal.

In regard to early diagnosis, that is a very important thing. Every surgeon in speaking on the surgery of malignant disease urges that the diagnosis be made early; but nevertheless, the man past middle life is treated for hoarseness under a diagnosis of chronic laryngitis for a year or two, and then he comes in with a hopeless sloughing, ulcerating lesion, glandular involvement, pain and cachexia, in other words, the diagnosis is made when there is no good in making it.

If the profession would only take to heart such papers as that of Dr. Dickinson and have the larynx examined immediately, when a man in middle life gets hoarse, a large percentage of laryngeal cancers could be cured. Prescribing for laryngitis without looking at the larynx is a great wrong. There are two methods of treatment that were not referred to in the paper, namely, diathermy and fulguration. I have seen some cases with relative cures, by Dr. William L. Clark of Philadelphia, and there are recorded a number of cases treated by Mr. Douglas Harmer of London, England. Cooking the tissues by fulguration has been followed with good effect, but as between operation, radium, fulguration or diathermy, I think statistics will in the future map out a field for each.

In conclusion, I should like to refer the pessimist on cancer to the last number of the *Saturday Evening Post*. Professor Keen reports the operation, for malignancy, on Grover Cleveland, who survived for fifteen years and then did not die of cancer.

Dr. R. H. Boggs, Pittsburgh: Dr. Dickinson is very modest. He had a case ten years ago of sarcoma of the tonsil that he removed, and which I treated afterward. This patient is well and alive today.

Just one word in regard to the case that I referred to Dr. Dickinson; probably that will answer Dr. Jackson's remark. When this patient came to me, he had been refused operation. The growth was growing very rapidly; the glands were involved, as Dr. Dickinson stated. He was treated with radium inside the throat, and I gave him almost a caustic dose, more radium than one would ordinarily give, unless one expected to have the remaining portion of the growth removed surgically. When he was referred to Dr. Dickinson, the tissue was undergoing a degeneration. The type of carcinoma had been changed by radium, as well as being reduced in size. Before radium treatment the carcinoma was growing rapidly like a medullary type, and after treatment it appeared to be less malignant, like a scirrhous cancer.

Now what will take place in those glands? It is well known that the smaller the lymphatic glands and lymphatic vessels are, the more they oppose cancer dissemination. Radiotherapy is followed by a sclerosis of the lymphatic vessels which always checks metastases. In a case like this, an operation can be more safely performed if the malignant growth is checked and reduced in size, and the lymphatics partially blocked. Dr. Arthur Holding, last year at the American Roentgen Ray Society, pointed this out with a great deal of emphasis, he removed tissue after treatment which showed that a few cancer cells remained in some cases. If the lesion heals and a few cancer cells remain, we only have an apparent or clinical cure.

Dr. Dickinson, closing: I wish only to thank Dr. Jackson and Dr. Boggs for discussing the paper. I had expected from what Dr. Jackson said to me a few minutes ago some really adverse criticism, but I find his opinion and mine about this subject are very much in accord, especially in regard to the early diagnosis. I wish we could get the profession and the public in a hopeful attitude on this subject, for there is a lot of hope. There is a wonderful difference in the degree of malignancy. Some tumors, while they are cancer or sarcoma, undoubtedly are not very malignant and they are curable. There is no question about it.

TIPS TO ORATORS

It is pronounced Ball-she-VEE-ky, if you want to use it. **Bolsheviki** is the noun; **bolshevik** is the adjective.

Cantonment is pronounced **CAN-ton-ment,** and not **can-TON-ment** nor **can-TONE-ment;** and **khaki** is **cocky,** not **cacky.**—*Kablegram.*

THE RADICAL CAUTERY OPERATION IN CARCINOMA OF THE CERVIX *

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It is hardly necessary to state that, for the cure of cancer of the cervix, we must depend upon operative treatment; other measures, especially radium, which has been found of considerable value, must be considered in our present light as useful adjuncts and palliatives, but not substitutes for the radical operation. For over twelve years the writer has used igni-extirpation, a total removal of the uterus by means of the cautery, which by this time has been sufficiently tested to justify its presentation to this honored body.

The exact technic employed varied considerably in the beginning until a settled, definite method was attained. At first the uterus was extirpated entirely through the vagina, but it was soon found that such important structures as bladder and ureters could not be sufficiently well protected through that canal and properly safeguarded, several fistulas having resulted in that manner. A combined method, vaginal and abdominal, was then tried and has proved very satisfactory and has done away with practically all dangers of serious accidents to the structures above referred to. It is now the technic used in all but the very exceptional cases in which the vaginal route shows decided advantages.

A special suitable instrumentarium is, of course, essential for this operation. The instruments necessary are (1) a transformer attached to the electric street current; (2) a heavy cable connecting the latter with the knife or clamps; (3) a large massive cautery knife for burning through the cervix and uterus; (4) a dome-shaped cautery for searing and burning larger areas, such as the necrotic cancer surfaces on the vaginal portion of the cervix and its canal; (5) two large heavy clamps, one of them straight, the other curved, devised by Downes, which are applied over the broad ligaments and cook the tissues included in its blades; (6) a straight and curved shield, slipped over these clamps for the purpose of protecting the surrounding tissues from the intense heat emanating from these instruments during their use. In addition to this special instrumentarium, specula and retractors are required. Water-cooled, and specially constructed specula, have not proved satisfactory in our hands and can, with good care and close attention, be readily dispensed with.

After the usual antiseptic preparations of the external genitals, they are thoroughly lubricated with antiseptic vaselin to render them more resistant to the intense heat to which they are exposed during the operation, and this should be repeated as often as necessary and specula and retractors should be cooled when overheated. A preliminary curettement is no longer considered desirable, on account of the danger of carrying cancer cells into the blood current and lymphatics; loose and broken-down necrotic tissues may be removed as the dome-shaped cautery passes over the affected surfaces until these have been thoroughly charred. The cervix being firmly held by one or two volsella forceps and drawn down to the vaginal outlet, the cautery knife is then used to detach the vagina clear around the cervix, employing a dull, red heat which will singe and burn, but not cut, leaving the surfaces dry, leathery and bloodless. In this manner the cervix is freed to the culdesac posteriorly and until the bladder is reached on the anterior surface. A retractor placed against the edge of the bladder makes gentle traction upon the latter while the knife inserted under it gradually loosens it from its attachments to the cervix. The latter is then amputated to any desirable height, always using a dull red heat which prevents any rapid cutting, sealing up all the bleeding points in its progress so that complete hemostasis is obtained during the entire procedure. Particular attention is given the basis of the broad ligaments on either side, because they are the seat not only of the principal blood supply, but also of the lymphatics, which must be sealed up and destroyed as thoroughly as possible. The cavity left after the cervix has been removed should not only be completely cooked, but also perfectly dry; if slight oozing should occur here and there, the bleeding points should be touched up with the cautery dome, until complete hemostasis has been secured.

This completes the vaginal portion of the operation. Vulvar dressings are applied and the patient placed in Trendelenburg position and the abdomen opened in the median line. After tying off both infundibulo-pelvic and round ligaments and separating the bladder widely from the uterus and broad ligaments on either side, and assuring yourself that Douglas' pouch has been freely opened, the operation is then completed by the heat method in the shape of the electrothermic clamps. The clamp is applied to one side of the lower uterine

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* Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

attachments, including broad and sacro-uterine ligaments, while firm traction is being made upon the uterus by means of volsella forceps inserted into its fundus and by grasping its vaginal end between two fingers inserted into the vagina from the peritoneal cavity through Douglas' pouch.

The heat is then turned on until the tissues between the blades of the clamps are thoroughly cooked and baked into a thin, white ribbon, when the instrument is removed. An application of about 90 to 110 seconds is required to obtain such a satisfactory ribbon. Cutting through this ribbon with scissors, frees the uterus entirely on this side. The other side is then treated in exactly the same manner, and the uterus delivered. When the tissues are rather wide and thick, two applications of the clamps may be necessary on either side to completely grasp and cook them thoroughly. The blades of the clamps must at all times be well oiled with sterile vaselin or olive oil to prevent the tissues from becoming baked to the instrument, in which case it may be difficult to separate them without lacerating and tearing the ribbon formed. The abdominal cavity should be well protected against the heated instrument, not only by the use of metal shields, but also by moist pads securely packed around them. With a good technic the pelvic cavity should now be perfectly dry and remain so, and as a rule not a drop of blood is noticed during the entire procedure. Closure of the wound surfaces down in the pelvic cavity does not materially differ from that used in an ordinary panhysterectomy.

At first thought it may seem quite a useless expenditure of time to precede the removal of the uterus by a slow and tedious amputation of the cervix, when the entire organ could be removed more quickly and just as completely by one procedure. When we consider, however, that one of the principal aims of the operation must be not only the extirpation of the entire uterus but more particularly the destruction of the parametrium or as much thereof as is possible, the object of this preliminary amputation becomes clearer. These structures contain extensive lymph channels carrying, often at the earliest stages, many cancer elements. Prolonged exposure to the intense heat not only seals up the lymphatics, but the destructive effect of the cautery probably is carried even further. It is not unlikely that some chemical action may result; possibly toxins which, penetrating the structures beyond the field of operation, cause damage to the less resistant cancer cells while not seriously injuring normal tissues. However that may be, experience has shown that time and patience in this work are essential to success, and this is a point which makes this operation less attractive to the active surgeon used to rapid and dextrous manipulations.

The convalescence following a successful cautery operation is usually remarkably smooth and free from complications. The absence of great pain is a feature especially noticeable.

A cancer operation, to stand the crucial test, must have two important requirements; namely, (1) the largest percentage of permanent recoveries; (2) the lowest primary mortality. How does this radical cautery operation meet these two requirements? There were, in all, 88 igniextirpations performed by the writer during the last twelve years; of these, 28 were vaginal, 2 entirely abdominal, and 57 combined, with 5 deaths or 5.7 per cent. Wertheim has a primary mortality of 16.6 per cent. in 714 operations, which is quite low when compared with that of some other surgeons.

Jacobson reports[1] 566 Wertheim operations performed by ten surgeons with a mortality of 23.11 per cent. That the mortality of the cautery operation can be reduced considerably with increased experience is demonstrated by the fact that in the last 39 cases only one death occurred. The reason of the low mortality as compared with other radical operations is above all the absence of sepsis. Both Wertheim and Schauta, who report the largest number of cancer operations, attribute practically half of their deaths to sepsis. There should be very little danger from sepsis in the cautery operation, because not only are the organisms often present in the parametrium completely destroyed by the intense heat and prolonged heat applied, but there are no breeding places left for bacteria in the form of a large open wound space or cavity or oozing surfaces. The operation leaves the pelvis perfectly dry and entirely covered with peritoneum, practically the same as after an ordinary hysterectomy. The operation being almost bloodless throughout, the danger of shock is greatly minimized, if not entirely eliminated.

The most important test of a good cancer operation is the percentage of permanent recoveries; that is, the number of cases which have survived the five-year period. Fifty-nine cases were operated upon over five years ago, including 4 cases of operative deaths, leaving 55 recoveries. Of these, 25 patients died before the expiration of five years from recurrence, two patients died during that time from other causes and one has not been heard from, in all 28 patients, leaving 27 who survived the five-year period, or 45.76 per cent.

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[1] American Journal of Obstetrics, January, 1917.

Wertheim, who has reported not only the largest number of cancer operations but is also credited with probably the best results, gives 42.5 per cent. of permanent cures. No further comment is, therefore, needed to show the superiority of the cautery operation to all other methods of radical treatment. Cancer of the cervix only is included in these statistics, carcinoma of the body of the uterus belonging to a class by itself, as its prognosis is so much more favorable than that of the cervix, in fact better than that of any other organ.

The cases presented were not selected cases; the cautery was always the operation of choice. Some cases were operated upon by other methods for various reasons; some of the patients were considered too old for such a prolonged and tedious operation. Patients over 65 years of age were treated either by a high amputation or by hysterectomy with cold clamps. In some cases the uterus was removed by the vaginal or abdominal route because it was diagnosed as a carcinoma of the body of the uterus. Closer investigation afterward demonstrated that the neoplasm had its primary seat in the upper portion of the cervical canal. A number of times the radical operation had to be abandoned when the abdominal exploration showed much more extensive involvement than had been anticipated.

While I fully realize that the number of cases presented to you is inadequate for a final verdict in favor of the cautery, they nevertheless justify and should encourage a trial in wider circles. The cautery has the advantage of safety compared with the radical operation now generally advocated. Its technic can easily be acquired and is less difficult to carry out than the Wertheim operation, and, as a firm believer in the cautery for cervical cancer, I have every confidence that the results will not be disappointing. With the cautery our old masters in gynecology have achieved results better than those obtained by all other means; with an improved instrumentarium, a more extensive and thorough removal of the diseased parts and a better technic, the cautery again promises to excel all other methods now in use.

Jenkins Building.

DISCUSSION

Dr. Edward A. Weiss, Pittsburgh: Of all the contributions which have been made to surgical literature in this country on the subject of surgical treatment of cancer of the cervix, none excel those of Werder, Clark and Cullen, and whatever procedures they have recommended we are adopting as standards. Many of the profession, however, have come to regard the Wertheim operation as the classical operation for cancer of the cervix. In this connection I wish to make a few remarks in justice to Dr. Werder. In 1898 he operated upon a patient for cervical cancer by a method which was entirely new, and he described and published that method in *The Journal of Obstetrics and Diseases of Women* under the title of "Combined Operation for Cancer of the Cervix." Two years later Wertheim of Vienna described practically the same operation and published it as an original procedure. His attention was called to the fact that Werder had performed and published this operation two years before. Wertheim in a private communication to Dr. Werder acknowledged Werder's priority, but in all his writings since that time, Wertheim failed to give the credit where due. Dr. Werder performed his operation for several years but he found that the mortality was so high and the morbidity was so great that he gradually abandoned it. Then with very great care and earnest study (as I can testify, as I assisted him in many of these early operations) he devised another operation which he calls igni-extirpation or radical cautery operation, which he has just described. It is true that about 1890 Byrne of Brooklyn devised an operation for the removal of cancer of the cervix by means of the cautery, but that is where the comparison stops. The manner of employing the Downes instruments is entirely original with Werder, but he has always given Downes full credit.

This operation is not to be undertaken by the amateur. Operature for the cure of cancer of the cervix is a formidable undertaking and it requires years of training to attempt any type of such operation. Any surgeon can do a hysterectomy, but that is not a radical operation. The Werder operation has certain difficulties. As he pointed out in the early part of his work, there is danger of burning and injury to the lower urinary tract. Four or five of his earlier cases had some bladder or urethral injury, but in his later cases there has been no damage to the urinary tract, which is certainly a splendid achievement. My own experience with this operation is limited to 48 cases with three deaths, with a mortality of 6 per cent., which is higher than Werder's, but when we stop to consider that Wertheim has 16 per cent. mortality compared with Dr. Werder's mortality of 5 per cent., that in itself is a great argument in favor of the cautery operation. Dr. Werder referred particularly to the immediate mortality. Some of the deaths that Dr. Werder included in his mortality were hardly due to the type of operation. I remember one death was due to embolism and another to frank pneumonia, but he included them in his mortality.

Shock is almost *nil* in the Werder operation whereas the Wertheim operation is often attended with great shock, as I have seen in Wertheim's own clinic. Another advantage of the Werder operation is the splendid control of hemorrhage. It is a common thing to do an operation of this kind with less loss of blood than one would encounter in the ordinary supravaginal hysterectomy. Another advantage is the absence of sepsis. Not one of the patients in the radical cases I have in mind died of sepsis, which is not true of Wertheim's operation. There we open the wide lymph spaces and infection is very likely to occur. This operation described today has very much to commend it: (1) the absence of shock; (2) the low mortality; (3) the smooth, easy convalescence; (4) and most important, the longer period of cure. Dr. Werder formerly called a patient cured if living after five years. In a recent paper he pointed out that five years free from recurrence is not enough. We should say seven, eight or probably ten years, but when we consider that 45 per cent. of the patients in these cases are living five years after radical removal that is enough to commend the operation as a most excellent procedure.

THE PRESENT STATUS OF HAY FEVER TREATMENT *

CURTIS C. EVES, M.D.
PHILADELPHIA

The results obtained in a few cases of hay fever treated with pollen extract tempted me to write upon this subject. I confess I have written much less than I had intended to when I consented a few weeks ago to present this subject.

Since the cause of hay fever has been definitely established as a pollen infection, all forms of treatment, except climatic, have been directed towards increasing the sensitive patient's resistance against the toxic pollens. The spring variety, in a majority of cases, is caused by timothy, fall grass, orchard grass, sweet vernal grass, and red-top, while the fall variety is usually caused by the pollen from rag-weed, golden rod, etc. When we consider that some of these pollens are carried for two or more miles by the wind, we see how impossible it is to destroy sufficient of the pollen-producing plants in any one locality where they are at all numerous, to make it safe for the hay fever victim. The surest relief is for the patient to go to a climate where the pollens to which he reacts are not found. The common varieties of so-called hay fever weeds do not grow well at an elevation of from 3,000 to 10,000 feet.

The local condition of the nose should be looked after before the period for an attack; a badly deflected septum increases the pressure and obstructive symptoms and favors the lodgment and retention of the pollens in the nose; likewise should hypertrophic rhinitis, polyps, cystic turbinates, etc., be corrected long before the hay fever season.

After the symptoms appear I believe local treatment should not be used. The reaction which occurs after the use of drugs, such as cocain, adrenalin, etc., intended to shrink the turbinates, usually make the patient more uncomfortable than before. If a patient can be taught to leave the nose absolutely alone, and to blow it only gently and as infrequently as possible, he will be more comfortable than with any kind of medication. Many patients, after long experience, learn this for themselves and keep away from the doctor during hay fever season.

As a great majority of our patients cannot, for one reason or another, seek a favorable climate for the duration of the hay fever seasons, the treatment by pollen extracts has come more and more into favor; and with the splendid work of such men as Freeman, Lovell, Goodale, Oppenheimer and Gottlieb, Noon, Clowes and a score of others, this method of treatment has been gradually improved so that it must receive the careful attention of every up to date rhinologist today.

It is not the object of this paper to go into minute detail of how the pollen extracts are prepared and how the injection of small doses of pollen extract increases the resistance of the susceptible person.

POLLEN EXTRACT

Each patient should be carefully tested with a small quantity of pollen extract to determine the pollens to which he is sensitive. Small test doses are supplied by different laboratories for this purpose. One or two minims should be injected under the skin; if the patient is sensitive to the pollen, an area of redness will appear in about five minutes with a small white spot in the center; if the patient is not susceptible, no change in the appearance of the skin will take place. If a patient is found to be sensitive to more than one pollen, the extracts may be combined and given together for treatment. On no account should a patient be given the treatment doses unless he is known to be sensitive to the pollen extracts given. A person who is not hypersensitive to pollens may be made so by the injection of extract in large doses.

The best results have been obtained by the prophylactic use of pollen extract. Beginning three or four weeks before the season with minute doses (1 c.c. of a 1 to 5,000,000 or 1 to 10,000,000 dilution) and gradually increasing the dose by about $\frac{1}{8}$ to $\frac{1}{4}$ every three or four days until from ten to fifteen doses are taken. If an overdose is given the patient may be thrown into a violent, acute attack of hay

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* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

fever with urticaria and exhaustion. These attacks usually come on about one hour after the dose is given, and last from one to three hours.

Strouse and Frank report having collected 241 available cases from recent literature, treated with pollen extracts, of which 45 patients were reported cured, 124 greatly relieved of their symptoms and 33 improved.

Oppenheimer and Gottlieb report 33 cases of spring variety treated in 1915 with 30 cures; 52 fall cases treated prophylactically with 15 cures and 25 marked improvement.

CALCIUM SALTS

Wilson reports 24 cases treated by the internal administration of calcium salts with very definite improvement in 6 cases, symptoms much less in 4 cases, symptoms about the same in 13 cases, one case with symptoms worse than usual. The following prescription was used: Calcium chlorid crystals 100 grams, distilled water to make 500 c.c. M. Sig. Take one teaspoonful in sufficient water during or after meals. Wilson began this treatment in June in some of his cases and carried it on throughout the attacks. Emmerick and Low, quoted by Wilson, advise the use of calcium salts throughout the entire year.

VACCINES

Autogenous vaccines have been recommended by some with good results, and one energetic physician, a manufacturer of vaccines, advertises as follows: "Experience shows that the immunizing influence of an appropriate bacterin will either cure the disease or so modify it that it causes but little distress. Use ———'s No. Write for literature.

I do not believe that true pollinosis is influenced by vaccines; they may take care of an infection somewhere in the body that is causing a rhinitis simulating hay fever.

247 South Seventeenth Street.

DISCUSSION

Dr. Evan O. Kane, Kane: It is very gratifying to learn that Dr. Eves has real evidence that a remedy has actually been found to benefit hay-fever patients. Many families are sufferers from hay-fever even though born and raised on a mountain top or on the seashore. It is encouraging to feel that relief other than that gained from climatic conditions may be afforded such subjects. The conduct of hay-fever is so peculiar and inexplicable in many ways that something tangible in the way of treatment that has been tried out will prove of the highest value.

I confess that I still, however, remain a trifle skeptical as to the wideness of the scope of pollen therapy, there being so many cases in which pollinosis is not the etiologic factor, though the symptoms are alike. I recall that of an old lady, in whose family hay-fever and asthma were of frequent occurrence, who had never suffered from the disease until she had passed 60 years of age; and even then neither pollen nor road dust affected her, but invariably if she took a short ride of but a mile or so behind horses she was subjected to an acute attack precisely like those described as attributable to pollen. Hers was evidently one of that neuropathic type to which so large a proportion of subjects belong, whose imagination makes them ascribe to almost any odor the power to produce their ailment. I think many of us have encountered them, and I question whether any sort of immunizing substance could be employed for such cases with success unless by suggestion.

On the summits of our Allegheny Mountain ridge, in a heavily wooded (not many years ago solid forest) region, the Big Level of McKean and Potter counties, is found an ideal climate for hay-fever patients, my own town having been especially favored. It is 2,000 feet above tide, and a prevailing northwest wind, passing far above the valley regions, strikes it directly from the Great Lakes. The air, therefore, is exceptionally pure. Here ragweed, to some extent, and goldenrod to the largest, to say nothing of a steadily widening circle of hay-growing farms, have filled the air with large amounts of pollen every summer. Yet, despite this fact, hay-fever patients continue to flock here and find themselves highly benefited. With the gradual disappearance of the forests in the neighborhood of our little mountain city, and their replacement with the above mentioned fields and wastes filled with pollen-bearing plants, the value of its climatic cure is, I believe, somewhat diminishing, but only to a limited extent. The early and late frosts curtail the time of pollen activities and the frequent showers do much to mitigate the irritation from the hay fields, and as a result it is astonishing how rapidly most hay-fever patients recover from their coryza on reaching us. Usually after two or three nights' rest, with proper attention to excretions and secretions, they forget to carry a handkerchief!

A few cases, however, will always be found who remain obstinately unmanageable until after the severe frosts of late September. For these I shall in future avail myself of Dr. Eves' valuable suggestions on pollen therapy. So striking, to my mind, is the hereditary predisposition to this disease that it is not surprising that its cure should be difficult.

Dr. F. C. Stahlman, Charleroi: I have a certain number of hay-fever patients each year, one of whom contracted it when he was 5 years of age. Before that time he had been perfectly healthy. I have a brother who contracted it at 50 years of age, who previously had been perfectly healthy. I have had these patients under treatment ten or fifteen years, and I secured relief more easily this year than before. My brother, who is in the elevator, said when the usual time came for his hay-fever he was perfectly free from it; when he thought the time was past he had occasion to go north and had a severe week of it. In the absence of the brother I put the son in the elevator and he found it was a relief to him; afterwards he wanted to go in the elevator when he had a bad day of it at home. When not in the elevator I had them under treatment.

I know nothing about the pollen treatment. Dr. Solis-Cohen, a number of years ago, gave in a medical journal a number of prescriptions, the principal ingredient of which was suprarenal extract. I used it in a light powder in the nose. I used also an ointment in the nose and on the mucous membrane of the eyelids. I thought it did good. Dr. Evans, for whom I have a good deal of respect, says his patients are not benefited by it. Nevertheless when my patients are off the treatment one day they come back for it. I have some other patients that come to me from year to year. Before the hay-fever season begins I try to have them come in, to see whether anything has developed in the nostrils that was not there the year before; if there is any obstruction I remove it.

Another thing I have thought does good is sodium bicarbonate internally, sufficient to overcome the acid condition of the nasal secretions. A number of my patients get through every season very comfortably with the topical applications and the internal treatment, keeping out of the dust and possibly in a cool place.

Dr. E. J. Stein, Lancaster: I became interested in this subject about four years ago. I have forgotten the name of the man who suggested autogenous vaccines, but at that time I treated with very indifferent success sixteen cases, which I reported in a thesis for the American Laryngological, Rhinological and Otological Society. This year I have taken up the pollen treatment as Dr. Eves has laid it out, and I want to add to his cases six treated by myself, five with absolute absence of any symptoms and one with very indifferent success. I believe thoroughly that pollen is the cause of hay-fever, which to my mind is a bad term, because it is not hay that causes it, unless you include timothy. The calcium salt I tried last year in fifteen cases with no success whatever.

Dr. Kane referred to a neurotic patient who could not drive back of a horse. That has been my experience in quite a number of cases, one of which is that of my brother. When horses were in vogue several years ago he had a special shield made to keep the horse dust away from him. I want to add a caution in those cases of "horse poisoning," as I have styled it. We want to be careful in all antitoxin injections, because it has been reported that patients have died from edema of the glottis due to injection of the antitoxin, the horse serum from which the antitoxin had been made being the cause.

Dr. Kane: If antitoxin was used for diphtheria in the family of the case I reported, the patient and nearly every member of her family would suffer very intensely, and several of them nearly died of laryngitis; they had all the symptoms.

Dr. Stein: I had a patient some years ago with laryngeal diphtheria, whose father was subject to the horse poisoning. We gave her graduated doses of antitoxin and stayed in the house prepared to do an intubation in case this edema started up.

I believe there is nothing in the suggestion theory of hay-fever. I think it is a distinct anaphylactic condition due to pollen in the air, and we cannot be too careful, as Dr. Eves has pointed out, in definitely locating the exact pollen. As he says, we can inject certain poisons that will produce anaphylaxis, which is really worse than the disease the patient had before. Some people cannot eat strawberries; I think if these cases were immunized the same as we do in hay-fever, this condition would be relieved.

But the main point that I think Dr. Eves would also want definitely impressed on our minds is the fact that we must take individual things that will cause hay-fever and have the test made, as Dr. Goodale in Boston showed several years ago; whenever these injections show a reaction, the reaction comes on very quickly. The point that he did not bring out is that it comes on within five minutes. Gottlieb and Oppenheim of New York demonstrated the action in Philadelphia last winter. They did not use the method referred to by Dr. Eves, but they made scratches on the arm similar to vaccination inoculations.

Dr. S. S. Kring, Johnstown: The subject of hay-fever is a very interesting one to me. One reason is that I have been a sufferer from the disease until this year. I have done nothing, taken nothing, have been living a normal life as I did before, but for some reason the hay-fever did not appear. I used to congratulate myself that I was considerable of a success in treating hay-fever. I treated it on the old lines and plans, using salts of calcium, iodid of potassium, and strict attention to the nasal passages, frequently cauterizing the turbinates with chromic acid. I kept a number of patients quite comfortable during hay-fever season for a number of years. But this last year I have had few patients. Some one commenced to treat with pollen injections, and I almost lost my business. As we grow older in the practice of medicine we are less apt to take up with the new things. Of course I have read about the pollen ever since the rest of you did, but I have read about so many things that have proved unsatisfactory in medicine that I am waiting, waiting to see if the remedy is really effective. I hope it is. The last two or three weeks nearly all of my patients, that have taken this pollen treatment, have come back to me. While they were relieved for a few months, at the latter part of the season they have been affected as badly as ever. Now will the pollen produce permanent results? If it does, we will be only too glad to use it, and I shall be glad to fall in line when I see that it is really effective.

Dr. Eves, closing: I do not know how long the immunity will last, but those who have worked along this line more than I claim that immunity will not last more than one year. I think the reason the patients came back to Dr. Kring was because they were not on the treatment long enough; the dose was not carried along far enough. Dr. Stein has answered the question for us. We all have patients of that kind. There is a man in New York at the present time experimenting on horse dust and trying to produce an extract. I doubt very much if he will have the same success that we have with pollen extract.

The first year I used pollen extract; year before last, my success was very much the same as Dr. Kring suggests; the patient came back later as bad or perhaps worse than ever. Last year I had a little better success, and this year I think I have a great deal better success, because I have graduated the dose better and because I have tested the patient out with each individual pollen which I suspected he might be subject to. It will be found if a patient reacts to ten or eleven pollens we cannot very well immunize him with extract. I mean it is hard to do it. I know a patient at the present time who was tested out by twenty-three different kinds of pollen and reacted to every one. The treatment did him no good.

A CASE OF MYATONIA AND THREE CASES OF PROGRESSIVE MUSCULAR ATROPHY WITH METABOLISM STUDIES IN EACH *

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PITTSBURGH

The four cases I present have a special interest owing to the fact that Dr. Max Kahn, as biochemist to the Western Pennsylvania Hospital, has used them as material for complete metabolic analyses. It is regrettable that circumstances have made it impossible for Dr Kahn to be present at this meeting, or to have ready his completed report. This report will be published later.

For purposes of study the progressive muscular atrophies may be divided into such forms as spinal, neural and muscular; but in practice we know that perhaps the majority of the cases, coming to us for diagnosis, do not fall sharply into any one of these classes. There are numerous transitional and mixed types; and differentiation from other systemic as well as from diffuse diseases of the cord frequently offers difficulties in diagnosis. Oppenheim says, "Many authors would like to class together chronic anterior poliomyelitis, progressive muscular atrophy, and amyotrophic lateral sclerosis as one disease."[1]

These cases falling into my hands routinely and without selection, present, as might be expected, mixed and transitional forms. Case 1 is a well-defined example of the Aran-Duchenne or spinal form of progressive muscular atrophy. But even in this classically typical variety, we have by an extension of the disease to the medulla, the additional clinical picture of progressive bulbar palsy. Case 2, while at first progressing in the direction of amyotrophic lateral sclerosis, has for the time being assumed the picture of a spinal spastic palsy. Case 3 is the rather exceptional type presenting symptoms characteristic of both myatonia and progressive muscular atrophy, and designated myatonia atrophica. This case seems to be progressing definitely in the direction of progressive muscular atrophy, a termination which Oppenheim[2] mentions as occurring at times in this type.

Case 4 is one of myatonia acquisita, exceptional in the fact that we have here represented transiently in one extremity all the characteristics of myatonia which generally affects permanently the entire musculature.

In none of the four cases were there hereditary factors of significance; there was no evidence of syphilis in any of the cases; there were no ocular palsies, nor optic atrophy — the absence of optic atrophy eliminating disseminated multiple sclerosis in Case 2, the only case in which it might come into consideration.

In Case 1, the Aran-Duchenne, as was to be expected, the results of electrical stimulation showed a diminution of excitability corresponding to the disappearance of muscle substance, with reaction of degeneration in certain muscles. In the myatonia acquisita we found an increased muscular excitability to both the galvanic and faradic currents with the prolonged muscular contraction peculiar to the "myatonic reaction." I am unable to report electrical findings in the other two cases.

Case 1.—P. W., aged 62, German, machinist, was admitted to the hospital complaining of difficulty in using hands and arms, difficulty in talking, and general weakness. Six years previously the patient had noticed weakness and "thinning" of hands and arms, a condition which gradually increased. Two years previous to admission he noticed thickness of tongue and some difficulty in eating and talking, which also has gradually grown worse. In the first months following the onset of the disease there had been some pain in hands and arms; the patient had been aware of no difficulty in lower extremities.

Examination revealed a typical picture of the Aran-Duchenne type of spinal progressive muscular atrophy; marked atrophy of the thenar and hypothenar eminences; of the interossei; of the muscles of the forearm and shoulder girdle, particularly the deltoid, spinati, trapezius and pectorales. The thumb lay in the same plane as the other fingers, producing the "ape hand;" the fingers were flexed in the typical "claw hand" position. Fibrillary twitching was everywhere in evidence in the muscles of the upper extremities, especially in the forearms. (This twitching had been noticed by the patient for only a year.) When the patient was standing, one noted more readily the winged scapulæ and atrophy of the muscles of the back. The general atrophy of the muscles of the trunk and upper extremities was noticeable in contrast with the still rather well developed musculature of the lower extremities.

In this patient there was well-marked evidence of the extension of the disease to the bulbar centers: The tongue was conspicuously atrophic, especially the left side, exhibiting constant fibrillary tremor, with mucous membrane thrown into deep folds; puckering of the lips was impossible; there was well defined atrophy of the orbicularis; patient complained that he could not keep his mouth open when asleep; his expression was masklike.

The patient's reflexes revealed an exaggeration of the knee jerks, obtunding of the plantars, ankle and patellar clonus of short duration; and moderate increase of all reflexes in the upper extremities,

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* Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

1. Oppenheim: Textbook of Nervous Diseases, p. 235.

2. Oppenheim: Textbook of Nervous Diseases, p. 258.

somewhat more marked on the right. The abdominal reflex was absent. Pupillary reflexes were normal except slight irregularity and slowing in right pupil. Babinski and Oppenheim reflexes were absent. General sensation normal. Mentally the patient was normal.

Etiologically no hereditary factor could be elicited. There was a history of diphtheria in childhood; the patient had always had bad teeth and on examination gums and teeth were found in an unusually bad condition. He drank beer freely for many years previous to the onset of his illness and whiskey in moderation; had always smoked a pipe. There was history of a penial sore forty years ago, but no evidence could be supplied clinically or by examination of blood and spinal fluid to indicate that there had been any syphilitic infection. Urine was negative. This man's occupation as a machinist had necessitated constant use of his fingers, hands and forearms.

Case 2.—E. B., aged 20, grinder, was admitted complaining of weakness and pain in lower limbs. Two years previously he had noticed numbness in the fingers of both hands. Several months later he became aware of stiffness in his ankles and dragging pain in calf muscles. With short remissions, his general muscular weakness has become progressively worse, being so marked in the lower extremities that the patient would at times fall to the ground. The disability has been greater in the right leg from the beginning. About a year previous to admission, on attempting to walk, the patient's thighs would spasmodically cross, relaxing and recrossing a number of times. This condition persisted for some months accompanied by pains in the legs and knees. At the beginning of the illness objects would drop from his grasp. Patient has latterly complained of a feeling of severe stiffness across his abdomen.

Examination presented a picture which seemed to justify a diagnosis of the amyotrophic type of progressive muscular atrophy: The gait was wabbly, spastic, and ataxic; he stood and walked with feet widely separated; atrophy in the lower extremities was seen chiefly in the glutei, adductors and calf muscles; the chief involvement above was in the muscles of the shoulder girdle; scapulæ somewhat winged and deltoids atrophic; the patient's hand grip was good; his speech was defective, having been so since childhood. For six months there had been slight difficulty in emptying the bladder, and some rectal tenesmus earlier.

The reflexes were everywhere hyperactive, much more so in the lower extremities; there was a clonic response on tapping for knee jerks; ankle and patellar clonus on both sides; Babinski, Oppenheim and Becherew reflexes on both sides; abdominal, epigastric and cremasteric reflexes absent. There was moderate lumbar lordosis. Pupils were slightly irregular with weak reaction to light. Patient swayed widely forward on closing eyes.

Etiologically no hereditary factors could be elicited. The patient had been a delicate infant; there was a history of one severe convulsion during this period; there was no history of specific infection.

This patient's blood and spinal fluid were negative for the Wassermann reaction, but the spinal fluid cell count showed 12.5 lymphocytes; this finding induced us to make a careful search for syphilis, but three provocative doses of salvarsan gave negative results. There was a slight albuminuria and hemoglobin was 75 per cent.

The patient's mental condition was normal. The absence of epigastric, abdominal and cremasteric reflexes with distinct evidence of muscular atrophy, especially in right calf muscles, argues against the diagnosis of spinal spastic paralysis. The presence of symptoms of bulbar palsy, spastic paralysis and chronic anterior poliomyelitis argues in favor of amyotrophic lateral sclerosis.

Case 3.—T. S., aged 54, boiler maker, American, was admitted complaining of aching, cramplike pains in lower part of abdomen, which had been present for two years.

During the six months previous to admission this pain had been more severe and there had been frequent attacks of diarrhea. The patient's appetite has been voracious and he complained that the pain increased after eating. He said that his bowels got "tightened up," and that he had been losing flesh rapidly.

On examination there were found symptoms peculiar both to myatonia and to progressive muscular atrophy. Patient was sallow, emaciated and exhibited great muscular weakness at this time. The reaction of his muscles to mechanical stimuli (percussion hammer) presented a varied picture of the myatonic type of reaction: On tapping the belly of a muscle, particularly the biceps, in addition to a sluggish response of the whole muscle there was a conspicuous local elevation; but in contrast to this elevation, on tapping the triceps there resulted a local depression; in other muscles an individual fascicular response occurred, giving (as could be vividly demonstrated by tapping the insertion of the pectoralis along the chest wall) somewhat the appearance of the successive tightening of the strings of a musical instrument. The patient said his muscles worked better after he "got going for awhile." Radials were sclerosed and beaded and the superficial veins felt sclerotic. Active peristalsis could be easily observed through the thinned abdominal walls. There was moderate lateral scoliosis in the dorsal region. Deafness has existed for ten years, but varies in intensity. The skin over the body generally was loose, being easily pinched into redundant folds, especially over the areas of former muscular prominences.

The deep reflexes were everywhere decreased; the pupils were sluggish to light and cataract was present on the right.

Etiologically the history revealed the fact that an uncle and aunt had died after middle age of a vaguely diagnosed condition in which there was extreme emaciation and weakness. There was a history of digestive troubles for fifteen years. Patient has always been most temperate in his habits, having used neither alcohol nor tobacco.

The following notes were made when this patient was seen a year subsequent to the above observations: At this time he was very restless; he kept constantly rubbing his hands together—the "hand-washing movement;" crossing and recrossing his legs; repeatedly executing short ambulatory excursions; he would give vent to numerous expiratory grunts, apparently for the most part unconsciously. A significant symptom of which he complained and which was much in evidence, was his continuous swallowing; this deglutitory activity had been particularly annoying for five months. The movement is, as we know, symptomatic of myatonia. On standing, the patient's knees would jerk back into extreme extension, a condition which he seemed unable to control; knee jerks were now fairly active, abdominal and cremasterics good; he said he craved food but was afraid to eat because of the distress in his lower abdomen consequent on eating. Unable to work, he was annoyed by seeing others in health.

Mentally the condition was that of an anxiety depression.

Case 4.—D. K., aged 30, American, draughtsman, was admitted to the hospital complaining of swelling and loss of power in left arm. The condition had arisen rather suddenly a week previous to admission, and had been preceded by an occasional swelling and redness of his left hand. He had also experienced a feeling of numbness and cold at times while resting on his left elbow when at work. At the time of definite onset, the arm and hand became red and swollen to the shoulder with slight pain down the outer side of the arm. The patient said his elbow felt as if he had struck his "crazy bone;" he said his left wrist was hard to flex at first attempt but after several movements the action would become much easier. The patient had noticed the same condition regarding movements of the entire left arm, on attempting to play billiards.

On examination it was evident that we had in this case a type of myatonia. Physically the examination was negative except for the noticeable enlargement of the left upper extremity as compared with the right. In measurement at the middle of the biceps there was a difference of three fourths of an inch, and at the middle of the forearms, a half inch. The actual enlargement which had taken place was greater than these measurements would indicate owing to the natural lesser size of the left upper extremity in right-handed individuals. On palpation the entire extremity gave to the examiner a feeling of tightness and of hypertonicity of the muscles. The patient's general muscular development was well above the average.

The typical myatonic contraction of the muscles was easily demonstrable on shaking the man's left hand: With the first grasp he was not able to let go for some seconds, but on repeating the movement would regain normal relaxation of the muscles. Movements in this extremity caused aching and a quick sense of fatigue.

It is to be noted that the superficial veins over this left upper extremity were noticeably harder than on the right, and were distended.

The reflexes of the left upper extremity seemed somewhat more marked than on the right; the muscles of this extremity showed a definitely increased irritability to mechanical stimulus; the knee jerks were equally increased.

There was a trace of albumin and of indican in the urine, which later disappeared.

Etiologically a complete family history, including the grandparents on each side, revealed no similar affection. With the exception of typhoid six years previously the patient had always been healthy. He had been active in athletics at school and college, temperate in his habits, and there was no specific history.

METABOLISM STUDIES OF THREE CASES OF MUSCULAR ATROPHY *

The patients were kept for a number of days on a Folin diet. Duplicate portions of the diet were sent down daily to the laboratory for analyses. The urine was collected, preserved with thymol and the twenty-four-hour specimens were examined. The daily fecal excretion was marked off by the administration to the patient of a capsule containing five grains of carmin. The intake and output of nitrogen, sulphur, phosphorus, calcium and magnesium were determined in the daily specimens. Complete nitrogen and sulphur partitions were made on each twenty-four-hour urine specimen. Special attention was paid to the creatinin and neutral sulphur output.

It was observed that in Case 3 there was a negative balance of nitrogen, sulphur, and calcium evidencing a state of tissue catabolism present in cachectic individuals. In the two other cases, 2 and 4, the creatinin nitrogen output and the neutral sulphur excretion were markedly increased. The endogenous metabolism in these cases seems to be markedly disturbed, and there is a condition of suboxidation present in the organism. In Case 2 there was noticed a state of demineralization as evidenced by the loss of phosphorus and calcium in the daily excreta. There was no evidence of intestinal putrefaction, since the ethereal sulphate fraction was always within normal bounds.

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DISCUSSION

Dr. Charles K. Mills, Philadelphia: One point which occurs to me in connection with this paper is the subject of the tonectic apparatus in the cerebral nervous system. No classification can be made of cases of this sort which does not take into consideration the fact that we have independently of the pyramidal motor system another system, extrapyramidal, although necessarily associated with the motor system and one that has received very little attention. My personal opinion is that tone as we regard it physiologically and clinically is not a cerebellar phenomenon, as has been taught by Luciani, Jackson and others, but is, in the human being at least, very largely a cerebral phenomenon. This tone is fed, of course, by the sensory impressions which pour into the nervous system from all parts of the periphery. I believe that this tonectic or tone apparatus has in the human being a cortical and a striate localization. In the lower animals its representation is largely spinal.

The cases which have been presented show this, especially the third case. It is impossible to understand the case of myatonia confined to one extremity, except on the basis of a topical representation of tone in the cerebrum. That case reminded me of some cases of perseveration which have been reported by others and myself.

I have some views based on these ideas which are different from those usually stated in the textbooks. This extra-pyramidal tonectic apparatus has a premotor cerebral representation in the cortex. It has also a lenticular representation. Lenticular lesions give symptoms largely tonectic, as in paralysis agitans, pseudoparalysis agitans, and Kinnier Wilson's disease.

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* Short summary of Dr. Max Kahn's report.

With complete transverse destruction of the cord goes flaccidity of the limbs because the highway for the transmission of tone from the brain to the spinal cord below the seat of lesion has been cut off and tone cannot therefore be transmitted to the spinal centers and tracts related to the paralyzed extremities.

Dr. Jacob Rosenbloom, Pittsburgh: I think that if Dr. Kahn had been here to show his findings Dr. Mills would have had a better opportunity of knowing the things he is working with. Dr. Kahn has established some very interesting results. Many of them to be appreciated require much special training along the lines of metabolism. We feel that he has done a very fine piece of work and I should like to compliment Dr. Wholey in associating with a man who can do the work and accomplish so much. To my mind it is only on these lines that most of these problems will be solved.

LATE RESULTS IN TWO HUNDRED AND FOUR CONSECUTIVE CASES OF AMPUTATION OF THE BREAST FOR CARCINOMA

OPERATED ON MORE THAN THREE YEARS AGO *

J. J. BUCHANAN, M.D.
PITTSBURGH

The 204 patients tabulated in this series include the author's entire experience in extirpation of the breast for cancer prior to Aug. 1, 1914.

Of these 204 patients it has been found possible to trace 153, exactly 75 per cent. of the whole number.[1]

AGE

The age incidence of the cases tabulated shows the usual curve of cancerous disease, being a steady increase from the thirtieth to the fiftieth year. Thereafter there is a gradual decline, which probably is accounted for by the smaller number of persons alive as middle age is passed, the proportion of the cancerous remaining the same or even increasing.

Age of Patients	Cured*	Dead or Recurring	Percentage of Cures*	Not Traced	Total
25 years.........	..	1	0%	..	1
26 years.........	..	..	....	1	1
30 years.........	1	1	50%	..	2
31 to 35 years...	2	8	20%	1	11
36 to 40 years...	7	13	35%	6	26
41 to 50 years...	22	31	41.5%	16	69
51 to 60 years...	8	25	24%	14	47
61 to 70 years...	11	10	52%	9	30
71 to 80 years...	3	1	75%	2	6
Above 80 years.	..	1	0%	..	1
Not stated......	4	4	50%	2	10
	58	95		51	204

* Beyond 3-year limit.

SEX

There were two male patients, both of whom succumbed to recurrence of the disease. One man died a few months after the primary operation from general carcinosis; the other lived seven years after his first operation and was operated on eight times in all.

These two cases exemplify the different degrees of malignancy of carcinoma.

OPERATIVE MORTALITY

In three cases the operation may be held responsible for the fatal outcome.

Case 1.—Woman of 42 years was operated on July 20, 1904, died four weeks later with pleuritic effusion, probably from metastasis, three pints of straw-colored fluid having been drawn off on two occasions.

Case 2.—Woman of 76 years was operated on Aug. 17, 1905, for an ulcerating carcinoma, died suddenly in the night, fifteen days after operation. No necropsy.

Case 3.—Woman of 84 years was operated on, under local anesthesia, Feb. 8, 1914, died at her home of pneumonia five weeks later.

The operative mortality, therefore, if the last case be counted, is 1.5 per cent.; omitting the last case, it is 1 per cent.

LATE RESULTS IN THE 153 TRACED CASES

Fifty-five patients are known to be now living and well, or free from recurrence when last heard from (in no case less than three years after operation). Three patients are known to have died from noncancerous disease more than three years after operation, making fifty-eight cases in all.

Eighty-five patients are known to have died of cancer; three from the operation; seven from causes unknown; making ninety-five in all.

Cases cured to or beyond 3 years...............	58
Cases not cured to or beyond 3 years...........	95
Total	153

Cured for 3 years or longer, 38 per cent.

If we set the arbitrary limit of a cure at five years instead of three, we have, of course, a much less favorable showing:

Cases cured to or beyond 5 years...............	36
Cases not cured to or beyond 5 years............	117
Total	153

Cured for 5 years or longer, 23.5 per cent.

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* Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 27, 1917.

[1] Credit for this high percentage is due to the painstaking work of the writer's secretary, Miss N. M. Crider, to the kind assistance of the many physicians who originally referred the patients for operation and who have recently supplied information about the subsequent history and to the patients and their friends.

PRESENT DURATION OF CURE IN PATIENTS KNOWN TO BE NOW LIVING AND WELL, OR FREE FROM RECURRENCE WHEN LAST HEARD FROM, IN NO CASE LESS THAN THREE YEARS AFTER OPERATION; OR TO HAVE DIED FROM NONCANCEROUS DISEASE (THREE CASES NOTED BELOW) NOT LESS THAN THREE YEARS AFTER OPERATION:

Patients Living and Well	After Operation
1	17 years and 3 months
1	16 years
1	15 years and 4 months
5	14 to 15 years
4	13 to 14 years
1	12 years
2	11 to 12 years
4	10 to 11 years
1	9 years and 1 month
5	8 to 9 years
6	7 to 8 years
2	6 to 7 years
1	5 years and 10 months
7	4 to 5 years
14	3 to 4 years
Patients Died	
1 of peritonitis	7 years and 6 months
1 of nephritis	6 years and 9 months
1 of arteriosclerosis	3 years and 5 months
58	

CONDITION OF THE FIFTY-FIVE SURVIVING PATIENTS

With the exception of the three deaths from extraneous causes noted above, all of the patients who have passed the three-year limit are well now; but certain complications are to be noted in the case of nine of them.

1. Edema of arm now exists in one case 4 years and 4 months after operation.
2. Intermittent edema of arm exists in one case 3½ years after operation.
3. Edema of arm existed in one case 1 year and 10 months after operation, but patient is reported well 3½ years after operation.
4. In one case operated on 8 years ago, the other breast had been removed for adenofibroma 8 years before.
5. In one case operated on 12 years ago, the other breast had been removed 6 years before.
6. In one case operated on 10½ years ago, the other breast was removed 6 years later.
7. In one case operated on 9 years and 2 months ago, the other breast was removed 8 months ago by another surgeon.
8. In one case operated on 14 years ago, the other breast was removed 5 years later by another surgeon, and the patient is now well.
9. In one case, operated on 13 years and 4 months ago, a secondary operation for removal of supraclavicular and cervical glands was performed 15 months later. (This is the only patient remaining well after this procedure.)

MODE OF DEATH AND DURATION OF LIFE IN THE FATAL CASES

Only approximate accuracy can be secured in the grouping of the recurring cases, as very many necessarily belong to two or more groups, invasion occurring perhaps locally and internally at the same time.

The rule, however, has been followed of accepting the diagnosis as given by the physician or the surviving relatives and, in case of multiple invasion, placing the case in the group which most probably caused the death.

IN ALL CASES WHERE THE CAUSE OF DEATH COULD NOT BE LEARNED, IT WAS ASSUMED TO BE A RECURRENCE OF THE CANCER AND TABULATED AS SUCH.

In seventy-six of the ninety-five cases the date of death was ascertained, and on these data was the average duration of life in each group calculated.

	Cases	Average Duration of Life
Local recurrence	17	1 yr. 10 mos.
Liver metastasis	14	1 yr. 3 mos.
Intrathoracic metastasis	10	2 yrs. 6 mos.
Recurrence in neck	7	2 yrs. 9 mos.
Recurrence in other breast	4	2 yrs. 10 mos.
Vertebral metastasis	3	3 yrs.
Gastric metastasis	2	2 yrs. 4 mos.
Axillary recurrence	2	3 yrs. 8 mos.
General lymphatic involvement	1	1 yr. 10 mos.
General carcinomatosis	3	1 yr. 10 mos.
Pelvic metastasis	1	5 yrs.
Meningeal metastasis	1	1 yr. 1 mo.
Site of recurrence unknown	20	1 yr. 10 mos.
Cause of death unknown	7	2 yrs. 7 mos.
Operative deaths	3	29 days

The average duration of life in the seventy-two patients dead of recurrence is exactly two years.

16 patients lived less than 6 months after operation.
8 patients lived 6 months to a year after operation.
17 patients lived 1 to 2 years after operation.
11 patients lived 2 to 3 years after operation.
7 patients lived 3 to 4 years after operation.
5 patients lived 4 to 5 years after operation.
5 patients lived 5 to 6 years after operation.
1 patient lived 6 years after operation.
1 patient lived 7 years and 4 months after operation.
1 patient lived 8 years and 3 months after operation.

PALLIATIVE OPERATION

In a few cases the breast was removed as a palliative operation, where cure was not to be expected. The patient was relieved of a disgusting and painful excrescence, life appeared to be prolonged, and certainly was made more endurable.

BENIGN GROWTHS REMOVED MORE THAN THREE YEARS AGO

During the period in which the 204 operations for carcinoma were performed, benign growths were removed in seventy-seven cases. Of these, fifty-three have been traced (69 per cent.).

WITH A SINGLE EXCEPTION[2] THESE PATIENTS HAVE ALL REMAINED FREE FROM ANY RECURRENCE, LOCAL OR OTHERWISE.

DIAGNOSIS AND TREATMENT

In most cases of breast tumor the diagnosis between the benign and malignant growths can be made by external examination.

It may be stated as a general rule that every operable breast tumor should be removed. If the malignant nature is evident, the complete operation should be performed. If the tumor is of a doubtful nature or apparently benign, it should be completely removed, examined in cross-section with the naked eye and also submitted to microscopical examination by frozen sections.

This procedure consumes not more than eight or ten minutes and should be gone through with while the patient is still on the table. If malignancy is evident to the naked eye, it is almost invariably confirmed by the microscopical report and *vice versa.*

If by either method of examination the malignant nature appears positive, the radical operation should be done.

METHOD OF OPERATION

Variations in the method of operation in the cases here recorded were made from time to time, but the end results do not seem to have greatly differed.

The principles adhered to have been (1) widely to circumscribe the affected area, (2) completely to extirpate all glands and fat in the axillary and postaxillary spaces, (3) of late years to remove the pectoralis minor and the pectoral portion of the pectoralis major muscles, (4) to coapt the skin edges without injurious tension, and (5) to cover raw surfaces with Thiersch grafts from the thigh, when necessary.

Various lines of incision have been employed, but an ovate-acuminate figure has been preferred. This starts at the insertion of the pectoralis major, passes parallel with and above the rounded border of the pectoral, circumscribing the breast with its diverging lines, which meet and are continued toward the midline like the stem of a leaf.

CONCLUSIONS

1. Amputation of the breast for carcinoma is a beneficent operation. Not only does it cure a considerable proportion of patients of the disease; but, even where it fails to cure, in many cases it deprives the disease of its external loathsome and painful character, and permits the patient to die of an internal recurrence which, being unseen and comparatively or entirely painless, may leave the patient hopeful till the end.

2. The necessary check on the operative diagnosis is to trace the cases pronounced benign and not radically operated. In this series, fifty-two out of fifty-three traced cases of growths considered benign have remained well (the other case being of a doubtful nature).

3. The operative mortality in this series is 1.5 per cent.

4. Cases reaching the classical three-year limit of Volkmann show 38 per cent. of cures. Those reaching the five-year limit show but 23.5 per cent of cures.

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DISCUSSION

DR. W. C. MACCARTY, Rochester, Minn.: It is an unexpected pleasure to me to discuss this paper for three reasons: In the first place Dr. Buchanan was one of the senior members of the profession who gave me lots of encouragement; second, he is dealing with a subject which has been my subject for eight or ten years; third, it is only by reason of such careful statistics as Dr. Buchanan has presented that we will be able to standardize clinical with pathological medicine. I think Dr. Buchanan was very fortunate in obtaining word from 75 per cent. of his cases. That figure about corresponds with results in our clinic.

In speaking of the two cases in the male breast he mentioned the great difference in the malignancy in carcinoma. That is very important and I know of no means histologically or otherwise of telling just how malignant a tumor is going to be. We read in the textbooks and hear lecturers say that scirrhus is not quite so malignant as the medullary carcinoma, but we can in the majority of cases frequently find both in the same slide. Therefore this rule for malignancy does not hold good. Another important point is that Dr. Buchanan had a patient with eight subsequent operations. We have patients come to us in the clinic at periods of three to six months and they have been coming for a number of years. One has come for ten years, and every time she comes she has a little portion of carcinoma removed. She is perfectly well so far as we can see. It is necessary to encourage our patients to return for operation because the surgeon may find a small nodule which if removed may enable the patient to live for a number of years. This I think is a very important point.

In the mortality list of Dr. Buchanan, I notice he did not have the experience which we have had in our clinic; that is, a case of fat embolus. I cannot give you the exact percentage of cases in which death occurs from fat embolus, but in an extensive series we did see them and they are frequent enough for us to take notice and study the question of fat embolism. In a very fleshy patient after five or six days the patient will suddenly collapse and at autopsy we find the lungs filled with fat. Not enough attention has been paid to fat embolism and Dr. Bissell in autopsy work has studied all of our cases. This is a point well worth watching.

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[2] This patient was operated on, May 7, 1906, for repair of a hernia and removal of a small fibrous growth from the breast; she died in another hospital 5 years and 10 months later of "cancer of the back," the breast not being involved.

Dr. Buchanan mentions 3-year and 5-year cures and I am sure he means when he says cures exactly what Dr. Frazier said about cures a few minutes ago. I thought that was the best definition of 5-year cures I have ever heard; that is, the patient was able to carry on the natural functions of life.

Another point which Dr. Buchanan brings out is the frequency of lesions in the other breast. He mentions here in complications 55 cases, in 9 per cent. of which the patients had lesions in the other breast. In another series of 76 cases of recurrences in Dr. Buchanan's series he mentioned that there were 4 cases recurring in the other breast. We frequently hear the clinicians speaking of these as recurrences and it is up to the clinician to prove that these are recurrences. It seems reasonable in view of this 9 per cent. of Dr. Buchanan's series that the same pathologic process exists in both breasts and that they both appear at different times. Maud Sly's work on "Heredity of Cancer" is extremely important in view of the transmission of predisposition, or lack ot defense against the etiological factor of cancer. So it is in these cases in which there is a double lesion; these people naturally have an increased predisposition or they would not have cancer in the first place. So I am inclined to believe from my own experience that many of these are not recurrences, but are independent conditions. I was interested also in the wide distribution of recurrences in Dr. Buchanan's series. They occurred in almost all portions of the body.

The palliative operation is of the greatest importance, at least we have considered it so in our experience. As I speak in the laboratory very frequently to the men working there I tell them I would rather be a good doctor than a good diagnostician because after all we are not treating the bodies of these patients alone, we are treating the minds. If we can do palliative operations and ease the minds of the patients I think it is very important and, in spite of the fact that I endeavor to run a very efficient diagnostic laboratory, I emphasize the fact that we should ease the minds of our patients, regardless of whether or not we are good diagnosticians. Dr. Buchanan mentioned that most of the cases might be diagnosed clinically. A short time ago I undertook an investigation which was a comparative study of the clinical diagnosis with pathological findings, in order to establish the clinicopathologic efficiency. I found that when the clinician put down the clinical diagnosis as carcinoma unqualified that he was correct in 95 per cent. of the cases. In other words, in our institution the clinician when he says carcinoma is 95 per cent. correct and has an error of 5 per cent. I found also in that series, in 23 per cent. of the cases diagnosed by the clinician he expressed a doubt as to the diagnosis. Another interesting point was that when the clinician made the doubtful diagnosis of malignancy it was 50 per cent. malignant. These were very important figures.

I cannot give you all the figures brought to my mind by Dr. Buchanan. We must standardize pathological findings with clinical findings and it can be done only by the surgical pathologist working with the clinician, as illustrated by Dr. Buchanan's paper. I was glad to note emphasis on the use of frozen sections. The question of frozen sections is a very important one and has been discussed by many important people in this country. Some of the best authorities have condemned frozen sections. I started out without frozen sections. For the last twelve years I have been using them daily. We use them to control results in patients. You can make them much more beautiful than celloidin and paraffin sections and I have been making celloidin and paraffin sections since I was fourteen years of age.

Dr. John D. Singley, Pittsburgh: Dr. Buchanan has given us the results of his work in cancer of the breast. Results are what count in surgery above all things. The patient is not at all concerned as to how the operation is done, but is vitally concerned as to the result. In Dr. Buchanan's series the mortality is low, as it should be, 1 to 1½ per cent.; but I would emphasize that there is a mortality in the best hands, however low it may be, and that we are not justified in saying to any patient that there is absolutely no danger in connection with this operation or any other operation, as is so often done.

The percentage of cases cured for 5 years, 23½ per cent., is considerably lower than those cured after three years, 38 per cent., which again demonstrates what has been long realized, i. e., that the time limit of three years is not sufficient to determine whether or not the patient is permanently cured. We all know of recurrences at a later period, but, since it is desirable to fix some period upon which to base conclusions, the present arbitrary time limit of 5 years answers for a working basis.

Edema of the arm is an annoying sequel. It cannot be prevented by covering the axillary vein with a portion of the pectoralis major muscle, as has been suggested (not in this paper, however). The cause is not a venous stasis, but a lymphatic stasis, and it has been very properly regarded as evidence of a very thorough and complete dissection of the axilla. In this series, the proportion of local recurrences is larger than recurrence or metastasis elsewhere, which is somewhat at variance with my own experience, and others I believe. This probably is due to the fact that, in the earlier cases, care was not taken to avoid local implantation, such as is the universal custom at the present time.

By far the most difficult problem connected with neoplasms of the breast is the decision at operation between removal of the growth and the radical operation, in doubtful cases. It is a difficult or impossible thing to detect on gross examination of the section of tissue, the first evidences of epithelial outgrowth; while it may require the careful examination of hundreds of microscopical sections before it is detected. But a few frozen sections can be examined during operation at the most. The negative result of frozen section examination, insofar as finding evidence of malignancy is concerned, is undoubtedly worthless because all the tumor cannot possibly be examined. The positive result, on the other hand, is of the greatest value and importance.

As to the technic of the operation, in addition to the points enumerated by Dr. Buchanan, I would add (and these I am sure he carries out) that the axilla should be cleaned out, proceeding from axilla to breast, lifting off both pectoral muscles with the mammary gland, as advocated by Willy Meyer of New

York; that the breast be manipulated as little as possible during the operation; and that the wound and its margin be kept carefully protected until the mass is removed. I am in entire accord with the conclusions of the paper. Upon the results Dr. Buchanan is to be congratulated.

Dr. Buchanan, closing: I want to thank these gentlemen who have so leniently criticized the paper and to say they have suggested several things which were not in the paper. Dr. MacCarty spoke of the subject of fat embolus. When I began to practice medicine fat emboli were recognized as a cause of death after fracture, but practically under no other circumstances. I would suggest that possibly this was the cause of the second death I recorded. The woman died suddenly in the night of the fifteenth day. I have had the privilege and pleasure of examining many slides made by Dr. Bissell of Rochester, Minn., and anyone who sees these slides, and I have no doubt that a number present have seen them, would be convinced that Dr. Bissell is on the right track and that fat emboli is a frequent cause of sudden death in other cases than fracture. The one thing that is strange is that it is so rare. Every surgeon is almost daily cutting through enormous masses of fat and still he rarely or never sees a case of fat embolus. Of course this is not a very good argument, but it has its use.

Now in reference to frozen sections, Dr. Singley has stated that the negative evidence is worthless. I am not quite sure it is worthless. If we make four or five sections it is not as good as if a hundred were made; but I will say that if a competent pathologist, such as Dr. MacCarty, will make the sections from suspicious parts of the tumor the chances are enormous that he will get the malignant picture if it exists. Now with reference to the looks of a frozen section, I will say that I have had the pleasure of seeing many, many sections made by Dr. MacCarty and I am sure that I never saw a single section made with the slow process of hardening in celloidin that was better than the ordinary run of frozen sections that Dr. MacCarty makes in his daily work.

I fully agree with Dr. Singley in removing the tissues en masse. We never take out a piece of tissue separate from the main bulk of everything. Our proceeding is to encircle the breast first with a primary incision to outline what we are going to take out so that when the muscles sag down and the breast crumples up a little that we will not be hampered by that crumpling and not know where to make our incision. We therefore make the outline first extending from the fat down to the muscle and then start at the insertion of the pectoralis major muscle and take that loose, separate the pectoral portion from the clavicular portion. That lets us into the axilla and then we work our way down, removing the breast and pectoral muscles as the last part of the operation. I believe this is the rational procedure. Dr. Willy Meyer of New York may be considered the originator of this operation, simultaneous with Halsted almost to the day.

DENTAL MALFORMATIONS NOT ALWAYS PECULIAR TO SYPHILIS

Galippe (*Bull. de l'Acad. de Méd.*) shows that there is no dental anomaly of shape, size, side or structure which is peculiar to inherited syphilis and cannot be found with other inherited taints.

NOTES ON OPERATIVE TECHNIC AND AFTER-TREATMENT OF INGUINAL HERNIA*

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In the preparation of this paper the author has selected from his hernia statistics records of nineteen cases of inguinal hernia which were referred to him for operation from the Navy Recruiting Station, Philadelphia. These nineteen cases form a unique series in that the opportunities offered for the study of this type of hernia were unusual; the subjects were all young, muscular adolescents with, as a rule, thin, empty, non-adherent hernial sacs; the twenty operations (one bilateral) were all performed within the comparatively brief period of two months (April 11 to June 12, 1917), thus enabling the author to devise a special type of operative technic which he believes fulfils all indications in this class of cases.

As to the anesthetic, each candidate for operation was given his choice between general anesthesia with ether and local with novocain. If a patient happened to be in hospital who had been operated upon by local anesthesia he was asked to reassure the candidate by stating that he himself had experienced absolutely no pain under the novocain method. My objections to ether in general are that when it can be avoided we are not justified in administering a toxic substance (acidosis, respiratory failure) and an irritant (brain, lungs, stomach, intestines, kidneys), and my particular objection to using ether for hernia operations is the liability to postoperative strain being thrust upon the wound from ether vomiting, ether bronchitis, and ether gas distention.

The technic for hernia operations under local anesthesia was first developed by Harvey Cushing, in 1900, and is known as the neuroregional method of infiltration. In my own work I have modified Cushing's technic by performing preliminary nerve-blocking; that is, by blocking the entire nerve supply before making the skin incision, reaching these nerves where they lie most closely together, namely above and medially to the anterior superior iliac spine. For this purpose I employ a ½ per cent. solution of novocain. I do not use adrenalin, for I find that I can get along without it; I am inclined to the opinion that adrenalin retards healing of the skin edges. For injecting purposes I employ a 10 c.c. Luer syringe to which is attached a special needle of almost hair caliber; this needle is so fine that its introduction into the skin is scarcely perceptible. Carefully directed infiltration obviates the necessity of using large quantities of the fluid. To anesthetize the skin a series of wheals is raised by injecting the solution along the intended line of incision; the skin incision is placed at least one inch above Poupart's ligament and its inner extremity terminates at the pubic spine, while its length varies with the amount of subcutaneous fat. At the middle of the incision and nearer the deep fascia than the skin the superficial epigastric vessels will always be encountered; these vessels should be isolated and ligatured before being divided, thereby keeping the field free from blood and diminishing the chances of hematoma formation. I do not clamp these vessels before ligating them, for I believe that the trauma done the vessel wall by the clamp increases the liability to postoperative femoral thrombophlebitis.

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* Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

Scarpa's fascia, the deep layer of the superficial fascia and always recognizable as a separate layer, is now divided. Subfascial injections of a few cubic centimeters of novocain are made beneath the glistening aponeurosis of the external oblique, especially directing the needle toward the site of the internal ring, thus anesthetizing the tissues about the neck of the sac, including the genitocrural nerve. The ilio-inguinal nerve is now visible where it emerges from the external ring, and may be blocked at this point with a few drops of the solution. The external oblique aponeurosis is split with a sharp scalpel parallel with its fibers, the inner end of this cut splitting the internal pillar of the ring, but not ordinarily opening the ring itself. In some cases there is a natural cleft in this aponeurosis extending outward from the ring; this cleft is palpable previous to operation and explains the "wide-open rings" of the clinician, but is not necessarily associated with hernia. When this cleft is encountered during the course of a hernia operation it is best to split the aponeurosis along the cleft instead of above it, for if the aponeurosis is split above the cleft, the cleft forms a weak spot in the lower flap of the split aponeurosis when we come to imbricate by the Andrews method.

The next step in the operation is to retract the two layers of the split external oblique aponeurosis; this is accomplished by a hemostatic forceps attached to the middle of each cut edge. On retracting the upper flap the iliohypogastric nerve is brought to view. This nerve pierces the sheath of the rectus muscle one inch above the external ring; on retracting the lower flap the ilio-inguinal nerve is revealed resting upon the cremaster muscle and sometimes loosely connected with the under surface of this lower flap. The sheaths of both these nerves will probably be edematous from the subfascial infiltration made before splitting the aponeurosis, and I believe that this subfascial infiltration is an important step, for the pressure under which the fluid is confined by the unyielding aponeurosis causes the solution to spread far and wide, anesthetizing the nerves as well as the coverings of the cord and of the hernia. It is well to block the ilio-inguinal nerve as far laterally as possible: the nerve is now carefully retracted downward with the lower aponeurosis flap. I have found the ilio-inguinal nerve entirely missing; its absence is mentioned in standard textbooks on anatomy. When the ilio-inguinal nerve is absent the iliohypogastric will usually be found exceptionally large, for now it has in association with it the fibers ordinarily conveyed by the ilio-inguinal nerve. The opposite of this condition, namely, a small or absent iliohypogastric and a large ilio-inguinal, also obtains. This anterior portion of the iliohypogastric nerve is purely sensory, and when imbricating the flaps of the external oblique aponeurosis by the Andrews method care should be taken when taking down the upper edges of the lower flap not to pick up the iliohypogastric nerve in the bite of the needle, lest postoperative neuralgia should supervene.

We are now ready to deal with the hernial sac itself. The short cut to the sac is the interval between the lower edge of the internal oblique and the cremaster muscles, an interval which is always evident. At this point the sac has just emerged from the internal ring; better exposure is made by retracting the internal oblique upward. When empty the sac is identified by its white color; the sac must lie in front of the spermatic cord, seeing that the structures assembling to form the cord approach the inguinal canal from behind, while the sac enters it from above and in front. Some novocain is now infiltrated between the sac and its coverings, the infundibuliform and cremasteric fasciae and a small quantity is injected inside the sac by puncturing it with the needle. In these ways not only is the sac anesthetized, but it is partially separated by an area of edema from its coverings, facilitating freeing of the sac by dissection. In dissecting the sac free, sharp knife feather-edge dissection is preferable to scraping the coverings away with gauze, for less trauma is inflicted upon the cord, and not until all blood-vessel bearing tissue has been removed do we consider the sac cleanly exposed. The freed sac is now picked up close to the internal ring and opened between forceps; the interior is inspected to see if there are any contents to be reduced; sometimes a tongue of omentum has contracted adhesions about the neck of the sac. Pinching of and traction upon the opened sac are liable to produce disagreeable nausea, and to obviate this I insert into the mouth of the sac a pledget of cotton saturated with novocain; the novocain is rapidly absorbed by the peritoneum, which thus anesthetizes itself. Traction is now made upon the sac until the normally elastic peritoneum around the internal ring is brought into the field; this normally elastic peritoneum is now transfixed with a round needle carrying a catgut ligature, the ligature is tied first on one side and then on the other, and the sac divided just distal to the ligature. On cutting the ligature the sac stump will suddenly disappear from view, being drawn inward by contraction of the elastic peritoneum. The distal portion of the sac is now removed. By gloving the finger with this distal pouch its isolation and removal are greatly facilitated, although at times this method will not work owing to the presence of fibrous trabeculae within the sac. The vas deferens is most adherent to the sac at the internal ring, and care must be taken not to include it in the inner portion of the ligature when tying off the sac.

The inguinal canal is now ready to be closed, and in describing my method of closure I wish to make it very clear that I do not advocate this method for every case of inguinal hernia; I advocate it merely for the type I am discussing in this paper; namely, for the thin-sac type with well developed, supple musculature and unstretched inguinal canals. I do not believe in, nor advocate the routine adoption of, any operation for inguinal hernia; rather, I favor adapting the method of reconstruction of the canal to the degree of development of the musculature of the canal. If the musculature is very poorly developed, as in certain cases of direct hernia, I might have to go to the extreme of transplanting a piece of fascia lata in order effectively to reconstruct the canal. But when, on the other hand, the musculature and fascias are well developed, supple and resilient, when the hernial sac is thin and narrow, and when the canal has not been overstretched (conditions which obtained in the series of cases I report) I have found that my method quite well suffices in establishing an operative cure. I term this the physiologic method of reconstruction. I get out of the inguinal canal the same way I got in; I get to the sac by working in the interval between the lower border of the internal oblique and the cremaster muscles, and I get out of the canal in the same way, namely, by closing this interval with a few interrupted sutures of chromic gut and then imbricating the flaps of the external oblique aponeurosis by the Andrews method.

In operating under ether I have had occasion to observe, in patients who chanced to be coming up out of ether at this point, i. e., just after the sac was tied off, the effect of strain upon the opened inguinal canal, but in no instance have I noticed any more bulging on the affected than on the nonaffected side. Again, we know that in the normal patient the sound inguinal canal, in the presence of strain, is supported in a valve-like manner by the contraction of the lower edge of the internal oblique muscle, which contraction diminishes the interval between this muscle and Poupart's ligament. By restoring the uninjured internal oblique to contact with the uninjured cremaster muscle, therefore, we are simply restoring the normal anatomic and physiologic arrangement of these parts, namely, the valve-like action of the internal oblique. When to this we add imbrication of the flaps of the external oblique aponeurosis, we have performed the simplest operation for this type of hernia, and one which I have found thoroughly effective in this class of cases.

As to the imbrication itself I believe that the surgeon, Dr. E. Wyllys Andrews of Chicago, who devised this method, overlooked one of the features that gives it its value — the intimate connection of underlying muscles and fasciae with the under surface of the upper flap of the external oblique aponeurosis. To this flap are attached posteriorly the internal oblique muscle and the sheath of the rectus; therefore, when this upper flap is dragged down and sutured to Poupart's ligament it drags down with it the internal oblique and sheath of the rectus, thus practically accomplishing as much as suturing the internal oblique and conjoined tendon to the shelving margin of Poupart's ligament by Bassini's method.

Why not use Bassini's method for this type of cases? Do we have to use a steel hawser to hitch a horse to a post? Would the method I describe prove effective in long-standing cases of hernia with wide, thick sacs, poor musculature and overstretched canal? Can we hitch a horse to a post with a cobweb?

After completing the imbrication of the external oblique aponeurosis a dead space will be found between the aponeurosis and the superficial tissues; this dead space can readily be obliterated by suturing the cut edges of Scarpa's, or the deep layer of the superficial fascia. For this purpose I use an interlocking buttonhole suture of fine (No. 00) chromic gut, and when the suture is completed it is found that the fat and skin edges have been drawn more closely together, by reason of the connection between Scarpa's fascia and Camper's, or the superficial fatty layer of the superficial fascia. Furthermore, this suture takes tension off the skin edges, thus preventing unsightly widening of the scar. The skin edges may be approximated by any method, but I prefer a continuous interlocking buttonhole suture of black silk. In inserting this suture the skin will be found to gape somewhat between every two skin punctures. This is advantageous, for as long as the gaps exist they afford ample space for drainage. If the wound be inspected twenty-four hours later it will be found that these gaps will have been closed by reparative swelling of the skin edges. This reparative swelling also accounts for unsatisfactory healing of the skin edges when they are approximated too tightly at the time of operation. In my novocain cases I slip a rubber dam into the outer angle of the wound and just beneath the skin. I remove this rubber dam at the end of twenty-four hours, and find that the dressing is pretty well soaked with the exuded novocain solution and blood-tinged serum, fluids which, if not removed by drainage, interfere with sound primary healing of the wound, and may require reopening of the wound at the end of a week. On returning the patient to bed I insert a pillow beneath his knees to relax the fascia lata and overcome its drag upon the sutured walls of the canal.

At the end of a week I remove the stitches and allow these patients to get up out of bed. On the eighth day I remove the dressing and send the patient home. I do not have him wear a truss. His supple tissues heal rapidly and firmly, and I do not care to cause atrophy of his fine musculature by keeping him in bed too long.

241 South Thirteenth Street.

DISCUSSION

Dr. William S. Langfitt, Pittsburgh: In many ways this paper has met my approval. The idea of suiting the punishment to the crime is very good. Certain operations for certain hernias are right, but I cannot agree with Dr. Skillern when he jumps on my old friend ether, a friend that has stood by me for 20 years. He speaks of acidosis and vomiting after ether anesthesia. It is not necessary to have that. If we give ether by the open drop method and use the Fowler position afterward we will not have any harmful results. That is how Fowler discovered the method. He was looking for a method to avoid vomiting. Incidently it helps peritonitis. We can eliminate acidosis with saline enteroclysis.

A friend of mine in 100 operations on different men examined the urine before operation and found a certain gravity, probably 1.015 or 1.020, and he gave them no enteroclysis. After the operation he found the specific gravity was 1.030 in the 100 cases. Then in 100 cases he examined the urine before operation and finding the specific gravity 1.015 or 1.020 he used continuous enteroclysis and on the second day he found the specific gravity was not increased. Now if you are afraid of acidosis, give 20 grains of sodium bicarbonate three or four times a day before the operation and I think there will be relief from that condition.

I have seen a lot of eucain anesthesia and I have seen very few doctors who are able to do that in a good way. I remember, of course, there are experts in that line. I remember going to see a very celebrated man at one time do an operation under eucain and about every other minute he would say, "Does it hurt you?" and the patient said "Yes," and screamed the entire time during the operation for hernia, which lasted over two hours; it is a very large hernia that cannot be done under thirty minutes. If the patient knows that he is being operated on, his brain is being affected. Obliterate shock by giving ether. The longer I live and the more I operate, the more I am getting to be the friend of ether. Novocain is an expensive drug, practically off the market. Why discard the good old faithful friend for one that works sometimes and sometimes does not.

Another thing Dr. Skillern speaks of is where to find the sac. It is always at the internal ring. Always look at the internal ring and you are going to find the sac. As to the closing of the hernia, the Frenchmen go so far as to say that if you obliterate the sac and do not do any sewing at all the hernia will be relieved. When sewing the first line get the shelving portion of Poupart's ligament good and strong and there will be no recurrence. All the recurrences I have had were due to the fact that I did not get a good and proper grip on the shelving portion of Poupart's ligament.

Dr. Moses Behrend, Philadelphia: Although I listened with great attention to the paper, I fail to see anything new in the operation which Dr. Skillern describes. It is the classical operation that I have done in a few hundred cases of inguinal hernia in the past few years, and it has always given great results. Up to the present time I have had no recurrences so far as I know. No cases of recurrences have come back to me when the operation was done in the way Dr. Skillern describes it. The only cases of recurrences I have had were two previously operated on. In both instances they recurred as a result of infection. The predisposition of becoming infected is one peculiarity in operating on hernias, inguinal or otherwise, a second time. I take issue with Dr. Skillern for doing any extensive major operation under local anesthesia. I do not like it. Possibly I have not the patience. There is something in that, but I have seen very able operators do major operations under local anesthesia and the patients squirming all the time. In the hernia operation they may keep perfectly quiet until you get down to the fascia of the external oblique, but after that you will find that they do complain of pain due to the operation. I witnessed several of these at Rochester, all done by very able men, and most of the patients complained of pain after the fascia of the external oblique was cut through. I have practically given up making suture in Scarpa's fascia because I believe we can get just as good results without it, and the more knots we tie the greater the danger of infection. The important point in sewing up hernia is to go well down toward spine of pubis, let it disappear and catch the shelving portion of Poupart's ligament and continue that up to the internal ring. The means of getting the sac is the simplest in the world and beautifully described by Dr. Skillern. This shortens the operation so much that it ought not to take more than ten or fifteen minutes.

Dr. George M. Dorrance, Philadelphia: I agree with Dr. Skillern in regard to local anesthesia. It is a question of anatomy. If the surgeon knows his anatomy he can take off a thigh with local anesthesia. Personally, I like to take out the entire sac and I am sure that I have it out and I am sure that I sew the muscle down to the shelf of Poupart's ligament all around. I use practically the old Bassini. I have had recurrences; I look up my hernia cases. Everybody has recurrences; if you do not you are not following your cases.

Dr. S. P. Mengel, Wilkes-Barre: I would like to ask Dr. Skillern what he means by a recent hernia. Does he believe in all cases the thickness of the sac is in proportion to the hernia?

Dr. Behrend: From the discussion of his paper I fail to find any difference from the regular Bassini operation.

Dr. Skillern, closing: Dr. Behrend states that he has performed the operation I describe 200 times and that he sees no difference between my method and that of Bassini. Let me see if I can enlighten him on this point. The Bassini method calls for sewing the internal oblique and conjoined tendon to the shelving margin of Poupart's ligament, thus forming a new floor for the cord, which is transposed. I do not perform this step. All I do in these cases is sew together the already contacting edges of the internal oblique and cremaster muscles. I then imbricate the external oblique by Andrews' method; this is important. I do not bother about transposing the cord; I don't touch it; I don't even see it. Bear in mind the type of patient for whom I have adapted this operation, the young individual with well developed musculature and resilient, supple tissues, and in whom the presence of a small congenital, thin, nonadherent hernial sac does not distort or overstretch the inguinal canal, or rob its bounding structures of their strength or elasticity. When you are up against an old hernia in an old subject, when your sac is large and thick and the musculature of the inguinal canal overstretched, weakened and inelastic, you are up against an entirely different proposition, and the canal must be strongly reconstructed to prevent relapse. In a word, I believe in fitting the punishment to the crime.

Perhaps some of you remember at the last Pittsburgh meeting of this society I read a paper on "Local Anesthesia." I have been working at anatomy for over ten years, and I feel that men who do not get good results with local anesthesia fail because they have trouble finding the nerves. That is generally acknowledged, if you make a search through the literature. Dr. Behrend referred to getting along nicely with local anesthesia until he reaches the sac with its fascial coverings. Perhaps he did not hear me say that after exposing the sac I inject a few drops between the peritoneal sack and the infundibuliform fascia which covers it. The injected fluid dissects apart these two structures. Now pick the still unopened sac up, take a fine needle and inject a few drops of novocain into the sac. Next make a nick in that sac, tie some vessels while waiting, and in 60 seconds the peritoneum will have soaked up the novocain as it soaks up saline and you can remove the sac without any nausea sensation on the part of the patient. Under local anesthesia I have removed goiters, pus appendices, amputated limbs and performed pedicled flap operations—no pain. As to our "good old friend ether" I have felt for some time that 10, perhaps 50 or 100 or 2,000 years from now ether will be banished from the pharmacopeia. When avoidable we have no right to subject a patient to the poison of ether: it is distinctly poisonous. Acidosis is a definite thing. Give a diabetic ether, you get acidosis, death. How do you know? Examine the urine and you find acetone and diacetic acid. This is no dream about acidosis; the thing is to recognize it and effectually combat it.

ENTHUSIASM *

HORATIO W. GASS, M.D.

SUNBURY

Delphi, the seat of the most famous oracle of the ancient Greece, was situated near Phocis on the south side of Parnassus. Apollo, according to fable, after he had killed the serpent Python, determined to build his sanctuary there. Seeing a merchant vessel pass by, he assumed the form of a dolphin, leaped into the sea, captured the Cretan ship and brought the crew, passengers and cargo to the shore. After landing, he assumed the form of a most beautiful youth, making his captives priests in his temple, inspiring them by singing. Here they built Delphi, calling it first Python.

Under the temple was a cave over which the oracles were delivered, the cave being called Pythium. Tradition ascribed its discovery to a shepherd who kept his flocks there, where he was filled by a prophetic vision from fumes issuing therefrom. Over the cave in the temple

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* Read at the Conference of Secretaries at the Pittsburgh Session of the Medical Society of the State of Pennsylvania, Sept. 25, 1917.

was placed a tripod, where the priestess sat as she received the vapor and thereby the inspiration of the Delphian god in this manner. After bathing, especially her hair, in the fountain Castalia, and crowning her head with laurel, she sat on the tripod, also crowned with laurel, then shaking a laurel tree and eating a few of the laurel leaves, she was seized with a fit of enthusiasm. Her face changed in color, limbs shuddered, cries and groans came from her lips, her eyes sparkled, she foamed from the mouth, her hair stood on end and, almost suffocating, the priests held her on the tripod from which she delivered the messages to enthuse the believers and followers of Apollo. Treasure poured in this temple for these messages, in that it became a center of wealth and was frequently plundered by the Persians, Gauls and Romans.

When you study the word enthusiasm, you will find it comes from the Greek, and signifies an "emotion of the bowels, internal agitation." We cannot say whether the word enthusiasm was invented to express the vibration of the nerves, dilatation of the intestines, contractions of the heart or the course of impressions from the brain to the viscera when we are deeply affected. One may be enthused by a sublime thought, another by a spectacular demonstration. For instance, a strong affecting tragedy is presented. A geometrician remarks "a very well-written performance." The young man next, so interested, says nothing; a lady sheds tears over it; another man is so stirred that to his misfortune he determines to go home and write a tragedy himself. This last is the real enthusiasm. Enthusiasm may be like wine, stir up such a commotion in the nervous system that reason may be destroyed, or it may occasion only slight agitations that do not convulse the brain or disturb the reason. Bursts of eloquence or sublime poetry are splendid examples.

My idea now is that our societies are the caves from which emanate these enthusing vapors. The officers of the society are the oracles which must catch the prophetic vision and carry it to the members. Of course, it is presupposed that the officer will be a real doctor, enamored by his profession, appreciating its possibilities, and possessed of real fraternal spirit. A man (notice I did not say doctor) whose sole ambition is the mercenary dollar besides thrusting his superior arrogant manner upon his associates, will never enthuse those about him. Therefore, use your influence to have desirable men elected to office.

Our bulletins help wonderfully. We must point out to our members that selfish segregation does not fill the soul with noble aspirations. The oracle could not speak until she breathed the vapors of Delphi, so we must lead our doctors to understand that society meetings and work are the well-spring to new thoughts, new ideas, new enthusiasm, which totaled produces the real enthusiasm, and therefore, a better doctor. Some men lose their enthusiasm when they have nothing to do, consequently, I frequently manage to have some special appointment for one and a committee for another. Even if not present, then call them by telephone and give them the work. Assign some to open discussions, even if they never attend a meeting and sooner or later they get irritated and either kick or come. Here let me drop a good word for the chronic kicker who kicks at almost everything, sometimes at the subject matter, sometimes at the construction. Own up that he is needed, being honest as was Pat, who, when he read the inscription on a headstone, "I still live," said, "If I was dead I'd own it." Yes, we often get mad at the kicker, but he is a necessary factor to keep us from getting in a rut, especially those of us who are too lazy to think up an objection, to say nothing of an original proposition. Another credit to him is that he is always at the meeting and, again, he is awake, and helps to keep the rest of us from slumbering. In our programs I fear we lose quite some enthusiasm by having too much foreign talent for our papers. In the societies outside of the big cities you must ask your man to prepare a paper, for he will rarely ask to be placed on the program. Enthusiasm is the element of success in everything. It is the light that leads and the strength that lifts men on and up in the great struggle of scientific pursuits and professional achievements. Every great commanding movement in medicine or in any profession is enthusiasm. Be not afraid of enthusiasm, even to the point of intoxication by it. You will do nothing effectually without it. Be not of the type of the mouse which lived in the wine cellar, and licking up too much of the wine became infatuated of its strength and standing on its hind legs said, "Now bring on your darned old cats."

Oxygen and acetylene burning together will radiate a heat of 6,300 degrees. It will penetrate a 12-inch piece of the hardest steel in ten minutes, which would require a saw twenty hours. Therefore, let our souls burn with enthusiasm and results will be achieved that ordinary effort would utterly fail to accomplish.

Cheer up! Be optimistic in order to succeed. If Dr. Lazybones fails to prepare his paper, have Dr. Everready on hand. If Dr. Grumble is especially whiney, call on Dr. Cheerful.

May I add a few conclusions applied to the different specialists that may help us. Will you ophthalmologists provide us with glasses that will not magnify the faults of others greater than our own? Will the surgeons please amputate our malice and egotism? The otologists will attune our ears to hear the good and abhor the bad. The stomatologist will teach us to understand that one third of what we eat is sufficient for nourishment and two thirds of what other people eat is what we doctors live on. Internists will keeps our hearts beating in unison, so that we may never feel want and never want feeling. The dermatologists will keep our skins active so that our faces may reflect love to one, friendship to a few and good will to all, while the general practitioner will prescribe "clean out, clean up and keep clean."

SELECTIONS

THE SEAL

Of "The North American Academy of the Homeopathic Healing Art," Located at Allentown, Pa., the First Homeopathic Medical College in the World

JOSEPH C. GUERNSEY, A.M., M.D.

BRYN MAWR

The Seal of "The Allentown Academy" as it was called, the first Homeopathic Medical College in the world, together with a large number of papers, diplomas, certificates, documents, letters, etc., relating to and narrating the early history of Homeopathy in Pennsylvania and the founding of said College, has been presented to the Hahnemann Medical College, Philadelphia, by Joseph C. Guernsey, M.D. *This Seal combined with the historical documents, constitute the most valuable archives of early Homeopathy, owned by any Institution in the world.*

"The Allentown Academy" was founded April 10, 1835, Samuel Hahnemann's birthday; on May 27, 1835, the corner stone was laid, in the presence of a large concourse of people and friends of the undertaking. Dr. Constantine Hering, who had been elected President of the Academy, delivered the "Inaugural Address" the original of which is among the papers which have come into the possession of "Old Hahnemann"—the next oldest Homeopathic College in the world!

As early as 1874 Dr. J. C. Guernsey began to collect data for the purpose of writing a history of the Academy, which will be found on Page 773, Vol. II., *Transactions of the World's Homeopathic Convention,* held in Philadelphia, 1876.

At that time (1874) Dr. Constantine Hering, President of The Allentown Academy; Dr. John Romig, Vice-president of the Academy, and Dr. Henry Detwiller, Secretary, also Dr. William Wesselhoeft, a member of the Medical Faculty, were still living and in active practice. Dr. Guernsey had numerous interviews with Dr. Hering, who described in detail the founding of the Academy, also its principles and intentions; he visited Dr. Detwiller, Easton, and from him obtained the Seal of the Academy, a Minute book and other mementoes; he went to Allentown and interviewed Dr. John Romig, through whom he received still further information and data; he corresponded with Dr. W. Wesselhoeft, Boston, who kindly contributed much valuable material connected with the Academy. All these gentlemen were most cordial and expressed pleasure that the existence of the first Homeopathic College in the world was to be established and perpetuated by written history.

It is interesting to know that Dr. Henry Detwiller administered the first Homeopathic dose of medicine in Pennsylvania, July 24, 1828. The case, one of retarded menstruation, accompanied by severe colic, was cured completely and speedily.

A condensed resume of the Allentown Academy is as follows:

On December 30, 1833, Drs. William Wesselhoeft, Henry Detwiller and John Romig met at the house of Dr. C. Hering, who then resided in Philadelphia, to confer upon the establishment of a Homeopathic School of Medicine. The result was the institution of "*The North American Academy of the Homeopathic Healing Art,*" to be located at Allentown, Pa., with Dr. Hering as President and principal instructor. Dr. Hering promised to move to Allentown and assume his new charge "as soon as he was guaranteed a salary equal to that of a first-class Allentown clergyman." It was planned to invite medical students to come to Allentown during the summer, there being no summer course anywhere in the country at that time, when only the science and application of pure homeopathy should be taught. No opposition to such a scheme was imagined, as there was to be no interference with the regular course of instruction in other medical colleges, and such violent opposition and persecution as ultimately arose was entirely unlooked for. A charter having been obtained, a stock company was formed for the purpose of raising funds to purchase a lot and building, and to support the institution. About one hundred subscribers from Allentown, Bethlehem, Philadelphia and New York, and in other parts of the country, raised enough money to buy a large block of ground in the center of Allentown for the building, which consisted of two wings of 60x40 feet each, three stories high, erected in a substantial manner of red bricks, and another two-story brick building was erected on Hamilton Street to serve for a chemical laboratory, anatomical and dissecting rooms. Also a botanical garden was laid out and stocked principally with officinal plants. The faculty consisted of Drs. C. Hering, William Wesselhoeft, H. Detwiller, E. Freytag, John Romig, J. H. Pulte.

To show the high standard, the comprehensive medical education and liberal course of instruction aimed at, the whole of *Article XXIX.*, from the "Constitution of the North American Academy of Homeopathic Medicine" is herewith presented: "The literary institution, according to the express design of its foundation, shall be as comprehensive in its operations as possible, and will embrace the following branches of study, as indispensable to the complete education of the physician, viz., clinical instruction, examination of the sick and semeiotics; pharmacodynamics and materia medica; pharmaceutics and medical botany; dietetics; special therapeutics, surgery and obstetrics; medical jurisprudence; general therapeutics; symptomatology and human pathology; physiology and anatomy; comparative anatomy and comparative physiology; zoology; phytology, and mineralogy; chemistry, physics, geology, astronomy and mathematics; history of medicine and of natural sciences; the Greek, Latin and German languages, as preparatory studies." Preliminary examinations of the students, before matriculation, were conducted by a committee. Candidates for diplomas were obliged to pass meritorious examinations in anatomy, physiology, pathology, materia medica homeopathia, homeopathic therapeutics, surgery and obstetrics. Two of the graduates, Drs. Charles Neidhard and Adolph Lippe, told the author: "The possession of an Allentown diploma is an honor to its holder, because it was obtained only by worthy applicants. Many who tried to pass were rejected as incapable."

A great amount of Homeopathic literature was published under the auspices of the Allentown Academy, including many valuable provings which have since become standard. In the latter part of 1836 Hahnemann's *Organon* and Jahr's *Manual* were translated into English and published. A weekly periodical was published by the Academy on medical, surgical and obstetrical subjects, embracing observations in and experiences from practice, etc., under the title, *Correspondenzblatt der Nord Americanischen Academy der Homoeopatischen Heilkunst*, also, *Archiv Zettel*. Also, a very elaborate monograph of snake poison. All these literary labors were chiefly wrought by the indefatigable Dr. Hering, the heart and soul of the institution.

The "North American Academy of the Homeopathic Healing Art" unfortunately lasted but a few years. Its funds were placed in the Allentown bank, which was undermined and destroyed, by its head man, and everything was swept away. The academical buildings and lot were sold to satisfy a mortgage of $9,000. Dr. William Wesselhoeft strove for several years to sustain the enterprise, but in 1842 he removed to Boston, whereupon the faculty ceased their labors.—*The Hahnemannian Monthly*, May, 1918.

PREVENTION OF VENEREAL DISEASE

War drags to light the problems of civilization, and focuses on them the attention they deserve but never get in time of peace. Some of these problems are medical, and one of the greatest is the control of venereal diseases. Millions of young men are brought together by the draft; and the dangers which beset them also in civil life, although greater than those of war, for the first time begin to attract attention.

In his address before the last meeting of the American Public Health Association, Surgeon General Gorgas pointed out that merely for the purpose of keeping in the line the largest and most efficient fighting force, the eradication of venereal disease would be worth more than some magic wand by which every wounded man could be cured and got back into line at the end of the second day.

The statistics compiled for the Council of National Defense show that in the armies of the United States there are five times as many cases of venereal disease as of the other communicable diseases, pneumonia, dysentery, typhoid, paratyphoid, malaria, meningitis and scarlet fever all put together. In twelve weeks there were reported from thirty-one cantonments, 21,742 new cases of venereal disease; and to keep these men, aside from the loss of their time and their permanent disabilities, cost more than to maintain Camp Dix with 20,859 men training in it.

When confronted by the facts in this form the most confirmed advocate of *laissez faire* admits that something ought to be done. Yet these figures understate rather than exaggerate the evil. Among the young men registered, but not called in the first draft, it is estimated there were four thousand syphilitics in Colorado; and five times that number who had gonorrhea. Of the cases of recent syphilis seen at the cantonments, in a very large proportion the disease was contracted before the young men were brought under military discipline; and in practically all the others it has been contracted when the men were on leave of absence from camp. The venereal disease in the army is only a diminished representation of the venereal disease prevalent in civil life.

To protect our soldiers from this their greatest danger much is being done. Since the days when armies first began to disseminate these diseases, there has never been an army so well guarded against their ravages. It it were possible to guard them from the patriotic communities adjoining our cantonments the problem would be almost solved. For the week ending May 10, 1918, the cases of venereal disease reported gave an annual rate of 270.9 per thousand in the National Army in America and of 35.1 per thousand for our expeditionary forces. In the former the verereal cases were three times as many as all others put together; in the latter, one-fifth less than the admissions for other diseases.

It is now fifty years since the work of Pasteur, Klebs and Koch began to point the way to the prevention of all communicable diseases, not only those that cause one-fifth of the sickness in our armies but those that cause the other four-fifths. The way is prevention of exposure. Twenty-four years ago (Philadalphia Polyclinic, 1894, page 227) the writer discussed the subject thus:

"In the present disposition of sanitarians to secure the health of the community at the cost of the privacy and personal liberty of the individual it is somewhat strange that the systematic registration of all cases of syphilis has not, ere this, been strongly and persistently urged.

"Nearly all the reasons which have been held to justify the adoption of rules requiring the physician promptly to report other contagious disease apply with equal or greater force in case of syphilis. There is no question in any quarter as to the contagious nature of the disease. It is as certainly and definitely recognizable as the other eruptive fevers, at least during the period of possible transmission. And while with it surveillance would need to be more prolonged, and quarantine, in some respects, would be more difficult than with many other affections, yet in these respects its management would be quite as simple as that of tuberculosis and leprosy.

"Nor would such a measure be without its precedents, for every attempt at the registration, inspection and isolation of prostitutes has been justified solely as an effort to limit the spread of venereal disease.

That such attempts have uniformly failed to accomplish their purpose is not to be wondered at, when it is considered that the attention was confessedly limited to less than half of the cases that occurred.

"Probably no more incomplete and imperfect measure of proposed sanitary administration than the so-called regulation of prostitutes was ever suggested or listened to. If measures for the prevention of the spread of syphilis and gonorrhea be adopted or seriously considered in the future, they should, at least, conform to the first requirement for any such sanitary measure, and deal with all cases, since every case is presumably a focus of certain infection, and experience has demonstrated that any less radical measure is worse than useless.

"Of course, a proposition of this sort need only be mentioned to awaken the most violent objections. And its execution would doubtless be met with bitter and persistent opposition on the part of male syphilitics, and their professional advisers. Yet when we come to consider the reasons that such opponents could offer against it, we find them equally applicable to the registration of any contagious disease; and there appears no reason why they should be given a peculiar consideration and weight when urged on behalf of this particular class of sufferers. Incidentally, such a registration would be of more extended educational and preventive value in connection with this disease than in regard to most others; for with syphilis exposure is more generally due to individual ignorance and recklessness.

"Of course, what has been said of the registration of syphilis will apply with equal force with regard to gonorrhea, and the same objections would need to be met in the one case as in the other."

Under the exigencies of war this question of the reporting of venereal disease has been forced from the realm of academic discussion into that of practical governmental action. Even those who oppose it admit its legality as a war measure, while ignoring its necessity as a sanitary precaution in times of peace. The proposal not to talk about it but to put it into operation arouses the opposition early foreseen. (See our April number, p. 104). There are great practical difficulties to be met; perhaps new laws regarding the relations of physician and patient will be needed; and new safeguards as to the records of health departments. If there were not real and important obstacles to be overcome the reporting of venereal diseases should have been adopted before the reporting of diphtheria or smallpox.

Will the obstacles that arise prevent safeguarding the interests of the community, and the physical and moral welfare of the race? Are we to fight the most dangerous of endemics without exact knowledge of the location of the foci of infection, now that scientific discovery has revealed the causes of these diseases and the exact conditions of their transmission? We have boasted of trumphs over lesser evils like malaria, typhoid, yellow fever, smallpox. Shall the greater dangers to health be left undisturbed?

At the Clinical Congress of Surgeons at Chicago last October, Secretary of the Navy Daniels spoke thus: "We are fighting for the safely of democracy. Victory is jeopardized by the preventable diseases which destroy the fighting strength of armies and navies. I call upon the medical profession, both within and without the Army and Navy, better qualified by knowledge and better equipped than any other body of men with influence and power, to assume leadership in this righteous crusade. Where you lead, government will follow, and the people will heed your direction when they will be deaf to the clarion call of all others."

These words voice the appeal of the nation, the appeal of the race to the medical profession. What shall be its answer?—Editorial, *Colo. Med.*, June, 1918.

THE TRUTH ABOUT MEDICINES

NEW AND NONOFFICIAL REMEDIES

Since publication of New and Nonofficial Remedies, 1918, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Antipneumococcus Serum.—A serum obtained from horses immunized with virulent pneumococci. Each lot of antipneumococcic serum is submitted by the manufacturer to the U. S. Hygienic Laboratory for potency test. Early massive (from 50 to 10 Cc.) intravenous doses of a highly potent serum prepared from the type of pneumococcus present in the case to be treated are necessary. The serum used should be obtained from an animal immunized with pneumococci of the type corresponding to that present in the special case under treatment. Thus far Type I serum alone seems to be on reasonably secure clinical grounds.

Antipneumococcus Serum, Type I, Lederle.—Marketed in a pressure syringe containing 50 Cc. Schieffelin and Co., New York.

Antipneumococcic Serum, Type I, P. D. & Co.—Marketed in a piston syringe containing 50 Cc. Parke, Davis & Co., Detroit.

Antipneumococcic Serum, Type I, Squibb.—Marketed in vials containing 50 Cc. E. R. Squibb & Sons, New York.

Acid. Phenylcinch.-Morgenstern.—A brand of phenylcinchoninic acid, U. S. P. It is sold as Tablets Acid. Phenylcinch.-Morgenstern containing 0.5 gm. acid. phenylcinch., and as Sodium Phenylcinch.-Water-Morgenstern, a solution of sodium pheylcinchoninate containing sodium bicarbonate and sugar and representing the equivalent of 1 gm. acid. phenylcinch.-Morgenstern per fluidounce.

Procaine-Rector.—A brand of procaine complying with the N. N. R. standards. Procaine is the substance which was first introduced as "novocaine." The Rector Chemical Co., Inc., New York.

Barium Sulphate-Brady for Roentgen-Ray Work.—A brand complying with the N. N. R. standards for barium sulphate for Roentgen-ray work. Geo. W. Brady & Co., Chicago (*Jour. A. M. A.*, June 1, 1918, p. 1599).

Antipneumococcic Serum, Type I, Cutter.—Marketed in vials containing 50 Cc. Cutter Laboratory, Berkeley, Calif.

Antipneumococcic Serum, Type I, Mulford.—Marketed in double ended vials containing 50 Cc. H. K. Mulford Co., Philadelphia.

Antipneumococcic Serum, Polyvalent, Mulford.—Prepared by immunizing horses with dead and living pneumococci of the three fixed types (Types I, II, III). Marketed in double ended vials containing 50 Cc. each, with sterile needle and tubing for intravenous injection. H. K. Mulford Co., Philadelphia (*Jour. A. M. A.*, June 22, 1918, p. 1923).

THE PENNSYLVANIA MEDICAL JOURNAL

Published Monthly **Official Organ of the Medical Society of the State of Pennsylvania**

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The Medical Society of tbe State of Pennsylvania does not assume responsibility for any statements or opinions published in this Journal.

ATHENS, PA. JULY, 1918

NECESSITY OF ELIMINATING DRINK

As we analyze the facts in a scientific and medical way there can be no doubt of the injurious effects of alcoholic drinks on both the physical and the mental well-being of our population. There can be no doubt that the greatest single factor that we can control in the interests of the public health of the nation would be the elimination of alcoholic drink.

In the slow evolution of civilization many great wrongs persisted for centuries because people had become so accustomed to them that they were accepted as matters of course. They became so intrenched that it required either centuries of education or a revolution to extirpate or right them. Great epidemics and plagues were accepted as inevitable and as visitations of God. Government by autocratic power and divine right without the consent of the governed has been tolerated. Slavery with its horrors was defended. The unequal rights of women went unquestioned. Among these great wrongs too long tolerated, none has done more injury to mankind than drink. Events now are moving rapidly in the convulsions of a world war. Women have demanded and will obtain, as they deserve the world over, their equal rights. The course of events is writing the death warrant of autocracy and rule by divine right; and science and education should eliminate not only the plagues and epidemics, but also the curse of drink from the world.

I want to plead for the united action of the organized medical profession of this country to secure protection by law against the injury that drink is doing to our people, not as a political measure, but as the most important public health measure that could be secured. In this crisis when we and our allies are fighting not only for ourselves, but also for humanity and civilization, we must organize the entire nation in the most efficient possible way, and this cannot be done without eliminating drink. Each member of the medical profession as an individual, each county medical society, each state medical society should take an active part in the propaganda against drink, and secure national prohibition, not years from now but now when it is so badly needed and will accomplish so much good, not only for our boys in khaki and in blue, but for the nation in arms. And when it has once been done away with, it could no more be resurrected after the war than could slavery.—Arthur Dean Bevan, M.D., in his address as president of the American Medical Association, Chicago, June 11, 1918.

A REQUEST FOR INFORMATION OF THE STATUS OF THE MEDICAL PROFESSION ON THE HEALTH INSURANCE LAW

In the midst of the all absorbing subject in the minds of us all at this time, the war and its severe levy upon the medical profession, we must not neglect other matters of great importance to physicians. The question of compulsory health insurance is before us and the commission created by the last Legislature to investigate this subject as applying to Pennsylvania, and report to the next Legislature, is at work. What is to be the attitude of the medical profession toward a plan of health insurance? I know it is difficult to get members of the medical profession to give sufficient study to these subjects, but, unless the profession itself will give information from its point of view, the commission will have very little to guide it in forming an opinion representing the profession. Data are continually coming to hand, indicating a need for better provision for the wage-earner in the event of illness.

We must determine to the best of our ability whether health insurance would prevent or promote sickness and poverty. Whether it will improve medical efficiency and how professional incomes will be affected under such organizations. We are indeed living in what seems to be a supreme hour of time and no body of men have had a more severe test to meet, and none have more zealously or patriotically responded to the test; but we must be equally earnest to prepare for a more peaceful revolution threatening around us. It will not be safe to feel that nothing of this sort will be attempted in this war period, for those earnestly backing this movement believe that this is an especially opportune time when the people are expecting constructive legislation and are of a receptive mind.

Having been appointed by Governor Brumbaugh to represent the medical profession on this commission, I would appreciate any facts or figures regarding the subject or information of individuals who can enlighten the commission upon the medical side of the subject. Also any available information regarding the status, income, charity work, etc., of the medical profession and the maximum number of patients who can be properly cared for in a medical and surgical practice. During the Fall months the commission will hold hearings on the subjects of Health Insurance and will invite such individuals as it may have reason to believe can give authoritative information.

J. B. McAlister.

234 North Third Street, Harrisburg.

THE CONTROL OF THE VENEREAL PERIL

BY THE "MAN-POWER" BILL

In the Congress of the United States, has been introduced by Hon. John F. Miller a bill (H. R. 12177) for the establishment of a Division of Venereal Diseases in the Public Health Service. The objects of the bill are to conserve and increase the industrial power of the country, augment the efficiency of the military forces, establish internment hospitals for those afflicted with venereal diseases and provide for control and punishment of persons seeking residence in various states and territories for immoral purposes.

The study and control of gonorrhea and syphilis and the enforced treatment of venereal diseases, the result of commercialized or clandestine vice, are undoubtedly of supreme importance. The problems associated with these infections are difficult of solution. It is believed that this bill, if made a law, would give, to those in charge of army and naval cantonments and civilian construction camps, power to sequestrate the female followers of these aggregations of men. Nothing less than some such legalized control is likely to affect, to any marked extent, the present danger to the community from the contagious affections under consideration. Local health authorities have endeavored to cope with the black plague, but with not very satisfactory outcome. The efforts of such federal law would be to constrain the migration from one state to another of any bawd, prostitute or female who practices sexual intercourse out of wedlock, or any man who consorts with such women by imposing, after conviction by the court, a penalty of $500 to $1,000 and imprisonment of from six to twelve months or both, whenever such persons are afflicted with syphilis, gonorrhea, chancroid or other venereal disease capable of being communicated to another person.

If this movement, in connection with similar actions in the states, districts and territories, thwarts the insidious undermining of civilian and military health by the gonococcus and the treponema pallidum, the early years of the twentieth century will have worked a miracle. The medical profession should support all legislative action of a serious character that looks toward that end. J. B. R.

PROGRAM FOR THE SECTION ON MEDICINE

The program for the Section on Medicine is attractive, timely and instructive. The topics are diversified and directed to the practical phases of medicine, and are prepared by men who have thoroughly studied the subjects. Some are presented by men from without the state, and those of our own members are among the best in our society.

As ever, the organized medical society represents the highest type of scientific and fraternal attainments. The present awful conflict should spur every physician to inquire whether or not he is doing his full duty to his profession and thereby to himself. The position medical men now occupy in governmental affairs makes such study most imperative. Each of us has a work to do, and to do it now, whether we are in the service or at home. Taking an active part in the medical affairs of our country or helping to sustain our brother or son in this work, each has a work to do. Our country need not fail if each of us do all we can.

Let the September meeting in Philadelphia be a great getting together of all medical men, and let the people of Pennsylvania see that the medical profession is willing, capable and prepared to do its part. I. J. M.

THE REMITTING OF DUES

It will be remembered that the House of Delegates at the Pittsburgh Session unanimously decided that "the 1918 *per capita* assessment of any member engaged in the service of the United States or her Allies be remitted, provided his county society remits his annual dues to the county society." So far as known Pennsylvania is the only state society that has remitted the state assessment for members in the service, though many of the county societies of most of the states have remitted the dues of members in the service and at the same time assumed the obligations for the dues or assessment to the state society.

The societies of Indiana and Jefferson counties remitted the dues of their members in the service, but insisted on paying the state society the *per capita* assessment for such members. The Clearfield County Medical Society has recently forwarded a check of $24.75, requesting that it be accepted in payment of the assessment for her nine members in the service. (See Bulletin Excerpts in another column.) After deducting these nine members the records show the *per capita* assessment of 904 members has been remitted, amounting to $2,486. There are, however, more than 904 members in the service, as many members who had accepted commissions paid their dues to the county society before they were called.

COUNTY SOCIETY HONOR ROLL

The following societies have forwarded 1918 receipts and *per capita* assessment for as many members as they paid for in 1917. The figures indicate the percentage of membership paid for as compared with 1917.

	Per Cent.
Carbon County	110
Lebanon County	110
Clarion County	109
Juniata County	109
Warren County	107
Union County	106
Elk County	105
Greene County	105
Bedford County	104
Bradford County	104
Clearfield County	103
Erie County	103
Wayne County	103
Berks County	102
Columbia County	102
Franklin County	102
Somerset County	102
Bucks County	101
Delaware County	101
Chester County	100
Clinton County	100
Crawford County	100
Perry County	100
Schuylkill County	100
Snyder County	100
Sullivan County	100
Wyoming County	100

The societies of Jefferson, Huntingdon, McKean and Potter counties have paid for all of their 1917 members who are now living in the respective counties, but not for as many as they had last year, some having died and others having been transferred.

Will not the officers and members of all our county societies make special and repeated efforts to bring every eligible physician into the society? Many of the graduates of 1917 and 1918 have entered some department of the country's service without having joined the county society, and it is therefore necessary to secure other physicians as members if our societies are to make up in numbers for deaths and removals. If the profession is to be of the most service to itself, to our state and to our country, it is necessary that every reputable legal practitioner be found in the organization. Special efforts should also be made to keep the county society in the best working condition so that both old and new members will be found doing their part in its activities.

PAYMENT OF PER CAPITA ASSESSMENT

The *per capita* assessment for the year 1918 has been received from component county societies since May 31, as acknowledged on page 588 of the June Journal, as follows:

1918				
6/3	Greene	21	6589	$2.75
	Lackawanna	187–189	6590–6592	8.25
6/5	Westmoreland	149–150	6593–6594	5.50
	Lehigh	88–94	6595–6601	19.25
	Philadelphia	1717–1737*	6602–6622	
	Lehigh	94–a*	6623	
6/6	Lackawanna	190–191	6624–6625	5.50
	Allegheny	1036, 1038–1040	6626–6629	10.00
6/8	Montgomery	135*	6630	
6/10	Lehigh	95*	6631	
	Lackawanna	192*	6632	
	Washington	105	6633	2.75
	Washington	106*	6634	
	Butler	52	6635	2.75
	Bedford	25*	6636	
	Bedford	26	6637	2.75
	Beaver	65	6638	2.75
	Philadelphia	1738–1742*	6639–6643	
6/11	Dauphin	153	6644	2.75
	Cambria	105*	6645	
6/13	Beaver	66	6646	2.75
	Schuylkill	103	6647	2.75
	Schuylkill	104*	6648	
	Allegheny	1041, 1049	6649–6650	6.50
	Allegheny	1042–1048*	6651–6657	
	Perry	21*	6658	
6/14	Venango	54	6659	2.75
	Crawford	51*	6660	
6/15	Clearfield	72	6661	2.75
	Clearfield (See Jan. 17, Nos. 6–12, 14 and March 28, No. 68, previously remitted, now paid for)			24.75
6/17	Lawrence	55	6662	2.75
	Lawrence	56*	6663	
6/18	Tioga	34	6664	2.75
	Philadelphia	1743–1748	6665–6670	27.50
	Philadelphia	1749–1760	6671–6682	33.00
6/20	Venango	55	6683	2.75
6/21	Mercer	64–66	6684–6686	8.25

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* Dues remitted.

STATE NEWS ITEMS

MARRIED

Dr. W. Wayne Babcock, Philadelphia, and Miss Marian C. Watters, Swarthmore, June 10.

Dr. Robert Kilduffe, Jr., Chester, and Miss Adelaide B. Long, Allentown, in Allentown, June 13.

DIED

Dr. William T. Bruce (Hahnemann Med. Coll. and Hosp. of Philadelphia, '76) in Lebanon, June 10.

Dr. William Townsend Phillips (Univ. of Michigan, Med. School, Ann Arbor, '84) in Library, May 2, aged 75.

Dr. Owen Franklin Person (Jefferson Med. Coll., '72) in Hazleton, May 11, from chronic nephritis, aged 69.

Dr. Lewis Robert McFarland (Eclectic Med. Inst., Cincinnati, '83) in Transfer, May 15, from diabetes, aged 68.

Dr. Jean Isabelle Best Moore (Woman's Med. Col. of Pennsylvania, '01) at Washington, April 7, from pneumonia, aged 41.

Dr. Benjamin B. Fishburn (Medico-Chirurgical College of Philadelphia, '98) was struck by a train and instantly killed in Lebanon, May 27, aged 47.

Dr. Frederick David Clair (Medico-Chirurgical College of Philadelphia, '15) of Philadelphia, is reported to have been killed in action recently in France, aged 27.

Dr. Robert Milliken Davis (Univ. of Pittsburgh, '97) in Wrightsville, March 23, from cerebral hemorrhage, aged 57.

ITEMS

Lieut. T. J. Doyle, Tremont, has been twice gassed in France.

Dr. Regina Downie of Beaver Falls has gone to France and has enlisted in the French Red Cross.

Dr. George Wharton Pepper, Philadelphia, has received the honorary degree of Doctor of Canon Law from Trinity College.

Lieutenant David Reynolds Morgan, Edwardsville, has won the French war cross for valiant service in the trenches in France.

Dr. Wilmer Krusen, Director of Public Health of Philadelphia, received the honorary degree of LL.D. from Allegheny College, May 31.

Major Nicholas Biddle, Philadelphia, has been made commanding officer of the Two Hundred and Tenth remount station, Camp Sevier, Greenville, S. C.

The Northumberland County Medical Society held a special meeting on June 19 to consider the need for more medical men in the Army and Navy.

Dr. Frederick J. Walter, Daytona, Fla., a member of the Philadelphia County Medical Society, was recently elected president of the Florida Medical Association.

A Base Hospital for Negro Soldiers with recreation grounds is planned at Fiftieth Street and Woodland Avenue, Philadelphia. Up to June 16, $10,000 had been secured for the purpose.

Dr. Elmer H. Funk has been appointed medical director of Jefferson Hospital to succeed Dr. H. H. Mohler, who recently resigned to head the Jefferson Base Hospital Unit No. 38, which has left for France.

The Hahnemann Medical College held its seventieth annual commencement, June 6, when twelve men received their medical degree. Representative Jeanette Rankin gave the commencement address.

The Medical Society of the Woman's Hospital at a recent meeting elected the following officers: president, Dr. Anna H. Thomas; treasurer, Dr. Mary Gilbert-Knowles; secretary, Dr. Mary R. Hadley Lewis.

Notice.—In the news item in June regarding the retirement of Dr. Samuel D. Risley the phrase, "who retires from public practice," has been interpreted by many as his retirement from practice, whereas the dinner was given in honor of his retirement from the staff of the Wills Hospital only.

Dr. Wilmer Krusen, director of public health and charities, in his weekly bulletin urges methods for combating the fly—the enemy at home. He especially urges that fly traps and fly paper be put in the homes, that foodstuffs be kept under cover, that sinks be kept clean and that all garbage be kept in a tightly covered receptacle.

A $50,000 Bequest to the University of Pennsylvania is included in the will of the late Dr. William C. Goodell. In the event of the estate not equaling the total of the university bequest a trust fund is to be created and a bequest paid from the income in instalments. The money is to be used to endow a chair of gynecology.

Dr. J. S. Neff, former Director of Health of Philadelphia, has been named by Governor Brumbaugh to be a member of the advisory board of the State Department of Health. Dr. Thomas E. Munce, acting State Veterinarian, was named to sit in place of State Veterinarian C. J. Marshall, who is in the national service.

Major James P. Hutchinson, Philadelphia, is now commanding officer of the American Red Cross Military Hospital No. 1, at Neuilly, France. Through the generosity of Philadelphians that city is represented by five wards of ten beds each but it is desired greatly to increase this representation. The sum of $600 annually endows one of these beds.

Vacancies in Private Practice.—The Pennsylvania State Committee of the Council of National Defense desires to announce that there are yet many vacancies in private practice for those who are not eligible to the Medical Reserve Corps. Applications should be turned in promptly to the Committee's headquarters, Room 515, City Hall, Lieut. Charles Scott Miller, Executive Chairman.

Infant Mortality High.—The Child Federation has been investigating the problem of Philadelphia's child mortality, which is now higher than in any other city of the United States with one exception. The investigations show that in the poorer sections, the salaries of a year ago are being stretched over the greater demands of today with the result of crowded housing conditions, poor and insufficient food, and inadequate sanitation.

Jefferson Hospital Unit Leaves.—After eight months' training, the Jefferson Hospital unit, known officially as Base Hospital No. 38, departed June 21 for an embarkation point. The hospital has a capacity of 1,000 beds and a staff of thirty-five surgeons, 100 trained nurses and 200 enlisted men. College graduates compose more than 60 per cent. of the male personnel. The hospital was organized a year ago, with headquarters at the Second Regiment Armory, Broad and Diamond Streets. Camps have been maintained at different times at Chadds Ford and on the grounds of the Stenton Athletic Club. Major William M. L. Coplin, president of Jefferson Medical College, is medical director of the unit.

Two New Base Hospitals at Allentown.—With the arrival of a contingent of several hundred recruits, many of them professional men, from the military camp at Charlotte, N. C., Base Hospitals Nos. 67 and 68, at Camp Crane, are practically completed. Most of the men received their early army training at Fort Oglethorpe, Ga., and were then sent to a military training camp to learn the soldier business. At Camp Crane they will complete their training for service at the front, the period varying from two to three months. Two months ago these two base hospitals existed only on paper filed in the War Department, but they have grown steadily in strength and by August 1 they will be ready for service in France. They are under the command of Lieut.-Col. J. A. Haefblower and Major A. F. Siter, with Lieut. Oscar F. Cox as adjutant.

Thirty Dispensaries to Be Opened.—Arrangements have been made by the state health department for the opening of a genito-urinary dispensary at Harrisburg. The dispensary will be in the rooms of the tuberculosis dispensary conducted by the state. This dispensary is one of thirty to be opened in various parts of the commonwealth by the health authorities. They are organized for a three-fold purpose: the relief of the physician from the almost compulsory burden of caring for the numerous charity patients suffering from venereal diseases; the prompt and efficient care of such patients free of charge who otherwise would neglect their condition with serious results, and, the betterment of the general health of the community by diminishing and, if possible, eliminating the menace of transmission of the seriously infectious venereal diseases by reaching all such cases and rendering them innocuous as rapidly as possible. The dispensaries were planned by the late Dr. Samuel G. Dixon, months before his death.

GENERAL NEWS ITEMS

One Half of Tacoma's Physicians are said to have entered the service.

Dr. Valentine Mott (Bellevue Hosp. Med. Coll., '78) died in New York City, from angina pectoris, aged 66.

Sick and Wounded Soldiers to the number of 184 were landed in the United States during the week ending May 31, and were sent to army hospitals.

The Massachusetts Medical Society held its one hundred and thirty-seventh annual meeting in Boston, June 18 and 19. The customary annual dinner was "wisely and fittingly" omitted.

The Attendance at the Chicago Session was 5,553. Pennsylvania furnished 164, being eighth in the list, the other seven being Illinois, Iowa, Ohio, Indiana, Wisconsin, Michigan and Missouri.

Protection of Practice of Medical Men.—The members of the Northeastern Colorado Medical Association have provided for the business interests of their associates now in army service by a resolution similar to those passed by the Denver and Pueblo County Societies, pledging to the doctor in the service 50 per cent. of fees collected from his patients.

PATRIOTIC MEETINGS.—Do not fail to read the reports of the evening meetings at Chicago during the Session of the A. M. A. as given in *The Journal of the A. M. A.* for June 15, beginning on page 1860, and June 22, beginning on page 1932.

LICENSE REVOKED. — At a special meeting of the Michigan State Board of Registration in Medicine held Jan. 23, 1918, the license of Dr. Walter Moffat, Grand Rapids, Mich., was revoked on the ground that he had been convicted in the superior court of "procuring, aiding or abetting in procuring a criminal abortion."

THE AMERICAN PEDIATRIC SOCIETY at its thirtieth annual meeting in Lenox, Mass., May 28, elected the following officers: president, Dr. Edwin E. Graham, Philadelphia; vice president, Dr. Henry Heiman, New York City; secretary, Dr. Howard C. Carpenter, Philadelphia; treasurer, Dr. Charles H. Dunn, Boston. The next meeting will be in Atlantic City.

A MEMORIAL TO DR. FITZSIMON. — In memory of Lieut. William T. Ftizsimon, Kansas City, Mo., who was killed last September, when the German airplanes bombarded the Harvard University Hospital in France, the park commissioners of Kansas City have decided to erect a memorial in the form of a public drinking fountain which will bear an inscription relating the details of Dr. Fitzsimon's work and death.

MORE ARMY NURSES NEEDED.—On account of the urgent need of nurses for the Army and Navy, the American Red Cross opened a campaign, June 10, to recruit 25,000 registered nurses. The requirements for this service are that applicants must be at least 21 years of age, graduates of a recognized school for nurses and must have had at least two years of training in a general hospital. In states where registration is provided for by law, applicants must be registered.

OFFER TO ERECT BIG WAR HOSPITAL.—Representatives of the Beth Israel Hospital have made a formal offer to the War and Navy departments to erect a $1,250,000 hospital on the square block bounded by Second Avenue and Livingston Place between Seventeenth and Eighteenth Streets, New York City. The plans provide for the accommodations of 500 patients. Both the War and the Navy departments have taken the offer under advisement. The funds for the construction of a fifteen-story hospital building are available and as soon as the offer is accepted, work will be begun.

PREVENTION OF TRANSMISSIBLE DISEASES IN ARMY. —Transmissible diseases have been carried into many camps by drafted or enlisted men, and especially by men home on leave of absence. The Public Health Service, therefore, after conference with Army sanitary authorities, has drawn up a plan for the notification of camp medical officers. You can assist in seeing that the member of your community understands this plan, and facilitate it by exercising special care in reporting their cases of communicable diseases to the proper health authorities. The new plan of notification is as follows:

"1. The physician should make an immediate report to the local health authorities who should notify (by telephone or telegraph if necessary) the Senior Medical Officer of the camp or post to which the selected man or soldier may become a menace. A duplicate notification should be made by the local authorities to the state health authorities.

"2. If there be no health authority having jurisdiction, the physician should notify (by telephone or telegraph if necessary) the state health officer who should notify (by telephone or telegraph if necessary) the Senior Medical Officer of the camp or post to which the selected man or soldier is about to go.

"3. The notification should be explicit, giving name of selected man or soldier and other identification data together with his address and the nature of the disease.

"4. The notification of the Senior Medical Officer of the camp or post by the local or state health authorities should be in addition to the present procedure in such case."

By direction of Dr. Franklin Martin,

JOHN D. MCLEAN, Major, M. R. C.,
Secretary, Committee on States Activities, General Medical Board.

ARMY SCHOOL OF NURSING.—The Secretary of War has authorized the Surgeon-General of the Army to establish an army school of nursing with branch training schools in various selected military hospitals throughout the United States. The necessities of the war required the establishment of this training to supplement the present supply of trained graduate nurses. The opening of this course of nursing will give opportunity for patriotic young women to become army nurses. The courses in nursing will conform, as far as possible, to the courses in the civil hospitals, and diplomas will be granted, providing these hospitals remain open long enough to complete the course in accordance with present civil hospital standards.

THE ILLEGITIMATE CHILD.—The Children's Bureau, U. S. Department of Labor, has made a study of Norwegian legislation regarding the rights of illegitimate children. These laws make the state instead of the mother responsible for establishing paternity and hold both parents equally and continuously responsible for the illegitimate child, which is considered to be entitled to maintenance, training and education from them both. The bureau examined the evidence obtainable but could not find justification for the statements circulated that there is a widespread increase of illegitimacy in this country since the war began; it believes, however, that the needs of the illegitimate child must be considered in the Children's Year campaign.

MEDICAL EVIDENCE AS TO DAMAGES.—In an action for personal injuries where there was evidence that prior to the accident the plaintiff had enjoyed good health, that immediately thereafter she was removed to a hospital in an unconscious condition and was confined to bed six or eight weeks and was absent from her employment for some months, and frequently since the time of the accident was subject to convulsions, it was held that the testimony of physicians, who made their examination more than two years after the accident, as to her condition is not to be stricken out on the ground that the connection between the accident and the plaintiff's present condition was not shown.—Albert vs. Philadelphia Rapid Transit Co., Pennsylvania Supreme Court, 97 Atl. 680.

Flag Day Exercises.—Fifteen thousand employees of Armour and Company, more than 75 per cent. of them of foreign birth, got a close up of "the big boss," at the Flag Day exercises June 14, at the Chicago plant. They liked the personal touch and "the boss" liked it. Preceding the principal program a parade including a band, a squadron of police, the Armour Volunteer Training Corps, the Armour Red Cross Unit, the Armour Girls Marching Corps, and the Armour Boy Scouts, was formed and marched through the stock yards and through the streets between the plant buildings. The flag raising program was held in front of the Armour Wholesale Market and after the singing of the "Star Spangled Banner," in which Mr. J. Ogden Armour led, the flag was raised while a bugler played "the salute to the Colors." Then Mr. Maclay Hoyne was introduced and after a few words he gave way to Mr. Armour. When the chief of the great industry arose the stock yards rocked with the cheers of the thousands. So affected was Mr. Armour that he could not speak and after a "thank you, thank you, this is great," he called for a cheer for the flag. It was given and given as a cheer never before has been given in the stock yards. Then the crowd sang America. During the program the crowd spoke in unison an "American's Creed," which follows: "I believe in the United States of America as a government of the people, by the people, for the people; whose broad powers are derived from the consent of the governed; a democracy in a republic; a sovereign nation of many sovereign states; a perfect union, one and inseparable, established on these principles of freedom, equality, justice and humanity for which American patriots sacrificed their lives and fortunes. I therefore, believe it is my duty to my country to love it; to support its constitution; to obey its laws; to respect its flag, and to defend it against all enemies."

BULLETIN EXCERPTS

BULLETIN, CLEARFIELD

Our councilor, Dr. S. M. Free, in conversation with the president and secretary the other day, advised us that he is very solicitous that the various county societies should remit to the state society the dues of those members who are in the service of the government, as the remitting of the dues of all of the members in the service is depleting the state treasury to the extent of about $4,000 this year; the overhead expenses of the state society are not in any way reduced and the demands on the state society for malpractice suits are as numerous as ever and the cost of the state journal is greater than other years.

On contemplation it seems to the secretary that this is nothing more than a reasonable suggestion and should be acted on favorably at the next meeting not only as a convenience to those who carry the responsibilities of the state society on their shoulders but as a business proposition on behalf of the membership of the state. It is only the part of good business judgment that we protect the treasury of the state in every way so that it may be in proper condition to protect us in an emergency which may arise to any of us at any moment and we all want to feel that we have back of us a substantial organization which does not need to stint or save in any way which may weaken our defense if we should need defense, and who may not need it at any time? The state society does not ask this but we may rest assured that such an action on the part of the various county societies of the state would be gratifying to the officers of the state society and would lift from their shoulders some of the anxiety which finds lodgment among them under present circumstances. Shall Clearfield County Society be the first in this move of generosity toward the state society? Think it over. It's good business.

MEDICAL REPORTER, CHESTER

When our members began entering the Medical Reserve Corps of the Army, our society, in common with most other county medical societies, agreed to look after the practice of those thus leaving us and to turn over to them or their representatives a definite percentage of the collections. We know that some of our members going into the army very naturally anticipated a considerable revenue from this source that would in some degree reimburse them for the sacrifice they had made.

In our own society, and probably elsewhere, the settlement of this debt was left to the individuals interested. In some other places the collections were paid into a common treasury and the disbursements made by a committee. It was supposed that by these or some similar arrangements the burden of the war could be to some extent divided between those who left all and accepted the call of their country and those who stayed at home. But what has happened?

We know of no complaint having been made by those who have gone into the Medical Reserve Corps but except in a few instances in our neighborhood but little has been paid to the families of physicians in the army. It is due to ourselves as well as to them to explain this condition of affairs. Possibly there is actually less medical work done. Some patients would go to their family physician for advice who would not go to the stranger who has taken his place. In some cases, too, it may not be discovered that a new patient applying for advice was formerly a patient of an absent doctor though we think a little care could determine this point. We wish to make all allowances and not to indulge in unjust suspicions but we propose to look into this matter a little and to get information from other counties and will report in another issue.

We read in the papers of the bombing from airplanes of Red Cross and other hospitals and that our own doctors and nurses have been killed or injured by these foul means. While they are heroically facing for us and for a holy cause such dangers as these, as well as the legitimate risks of war, we cannot afford to rest under any suspicion of profiting by their absence.

BULLETIN, HUNTINGDON

Letter from Captain Simpson

Captain Fred Simpson was East on army business and on his return to Waco,Texas, wrote us a letter of which the following is an extract: "Since coming back I have been paying up for the vacation. Twelve thousand recruits began coming in to fill up our division. They had to be put in a detention camp for two weeks to weed out contagious disease carriers, and the Division Surgeon put me in charge of the camp. It has meant giving the second and third antityphoid inoculations and the revaccination of all unsuccessfully vaccinated cases, the overseeing of the sanitation and the establishment of four infirmaries in which to hold sick call. I had two good medical sergeants and eight medical officers (five green) to get the job going and I want you to know it has been some job. For a week it had my goat but now we are seeing daylight. Just the keeping of the records straight is a big undertaking. Twelve thousand men are a lot when you see them rolling in and I tell you we are beginning to look like a regular division now. We will be out of this before August, I feel sure. It's certainly warming up down here, but there is always a breeze, and no humidity and the nights are wonderful. It is great sport to ride over the level, soft turf, with no fences to limit one's scope and direction. Of course, you know about the commutation of quarters for married officers; it will certainly be a great help financially; we all wish it had been in effect the past year."

Annual Meeting of the Sixth Censorial District of the Pennsylvania State Medical Society

The Sixth District Censorial Meeting was called to order by the president, Dr. A. S. Harshberger of Lewistown, at 12 M., May 15, 1918, at the Huntingdon Club Rooms. Dr. R. H. Moore was called on for the address of welcome, and Dr. A. W. Shelley of Port Royal responded for the District. Dr. W. H. Sears, secretary, read the minutes, which were approved. Dr. G. G. Harman was called on, who gave brief memorial reports on the deaths of Drs. R. Myers, J. G. Heading, R. M. Johnson and W. H. Hoopes, and gave an historical sketch of Huntingdon County. Dr. J. S. Brown of Mifflin County, Dr. L. A. Carl of Perry County, and Dr. W. H. Kohler of Mifflin County, gave short addresses. The meeting then adjourned to be continued at the Leister Hotel, where we had dinner and after which the program was continued by Dr. A. S. Harshberger introducing Dr. George M. Boyd of Philadelphia, who gave us a most interesting address on "Conservation in Obstetrics and Repair of the Perineum." He said in part that the physician is a practical Christian and in the present war are leaders in the moral crusade. For the love of our state, all over 55 years of age must do our best against the enemy. (Dr. Boyd has a son in France.) Physicians belong to a sacred guild. In regard to cesarean section, there is always the future danger of rupture of the scar, forceps should not be used too soon in moderately contracted pelves, in inducing premature labor we must consider two groups of conditions—organic diseases and relation of the cephalo-pelvic measurements, and the dangers in second labor. Pituitary extract must be used with caution, ergot now postpartum and not much used at that. Too great hurry is wrong. In cesarean section he uses non-absorbable sutures. Forceps can cause rupture. Placenta praevia is not a general indication for cesarean section. Immediate repair of perineum if hemorrhage from cervical artery or up into the broad ligament. Generally sew up torn perineum immediately. He described the three operations for complete tear of perineum. In answering questions he said that twilight sleep meant complete narcotization by morphin and had its dangers.

We were much pleased with Dr. Boyd as a lecturer and as a man and hope to have him with us soon again.

BULLETIN, INDIANA

Jamestown, N. Y., May 25, 1918.

F. W. St. Clair, M.D.,
Indiana, Pa.

My Dear Dr. St. Clair:

I wish to acknowledge the receipt of the April check which came yesterday. I received word last week of Dr. W———'s safe arrival "over there."

I would like to express to you my husband's appreciation, and mine also, of the splendid spirit of Indiana County's professional associates in carrying on the plan of such a sinking fund as you explained to me had been started. I appreciate fully that all the sacrifices are not alone made by the men who "go over," for those at home are doing splendid things.

Very truly yours,
E. A. W———.

COMMUNICATIONS

PROCAINE AND NOVOCAINE IDENTICAL

To the Editor: It appears that in certain quarters the attitude is taken that the local anesthetic sold as Procaine is not identical with that marketed as Novocaine. The Subcommittee on Synthetic Drugs of the National Research Council believes it important that this misunderstanding should be corrected and hence offers the following explanation:

The monohydrochloride of para-amino-benzoyldiethyl-amino-ethanol, which was formerly made in Germany by the Farbwerke, vorm. Meister, Lucius and Bruening, Hoechst A. M., and sold under the trademarked name Novocaine, is now manufactured in the United States. Under the provisions of the Trading with the Enemy Act, the Federal Trade Commission has taken over the patent that gave monopoly for the manufacture and sale of the local anesthetic to the German corporation, and has issued licenses to American concerns for the manufacture of the product. This license makes it a condition that the product first introduced under the proprietary name "Novocaine" shall be called Procaine, and that it shall in every way be the same as the article formerly obtained from Germany. To insure this identity with the German Novocaine, the Federal Trade Commission has submitted the product of each firm licensed to the A. M. A. Chemical Laboratory to establish its chemical identity and purity, and to the Cornell pharmacologist, Dr. R. A. Hatcher, to determine that it was not unduly toxic.

So far, the following firms have been licensed to manufacture and sell Procaine:

The Abbott Laboratories, Ravenswood, Chicago.
Farbwerke-Hoechst Company, New York.
Rector Chemical Co., Inc., New York.
Calco Chemical Company, Bound Brook, N. J.

Of these, the first three firms are offering their products for sale at this time, and have secured their admission to New and Nonofficial Remedies as brands of Procaine which comply with the New and Nonofficial Remedies standards.

While all firms are required to sell their product under the official name "Procaine," the Farbwerke-Hoechst Company is permitted to use the trade designation "Novocaine" in addition, since it holds the right to this designation by virtue of trademark registration.

In conclusion: Procaine is identical with the substance first introduced as Novocaine. In the interest of rational nomenclature, the first term should be used in prescriptions and scientific contributions. If it is deemed necessary to designate the product of a particular firm, this may be done by writing Procaine-Abbott, Procaine-Rector, or Procaine-Farbwerke (or Procaine [Novocaine brand]).

Julius Stieglitz, Chairman,
Subcommittee on Synthetic Drugs, National Research Council.

BOOKS RECEIVED

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

Nine Humorous Tales. By Anton Chekhov. Translated by Isaac Goldberg and Henry T. Schnittkind. Boston: The Stratford Company, Publishers, 1918. Price, $0.25.

Reclaiming the Maimed. A Handbook of Physical Therapy. By R. Tait McKenzie, M.D., Major, R. A. M. C., Professor of Physical Therapy, University of Pennsylvania. Illustrated. New York: The Macmillan Company, 1918. Price $2.00.

Cancer. Its Nature, Causes, Diagnosis and Treatment. By Robert Holmes Greene, A.M., M.D., F.A.C.S., Emeritus Professor of Surgery, Medical Department of Fordham University, etc. Published by James T. Daugherty, New York, 1918. Price, $1.50.

Interpretation of Dental and Maxillary Roentgenograms. By Robert H. Ivy, M.D., D.D.S., Major, M. R. C., U. S. Army; Associate Surgeon, Columbia Hospital, Milwaukee; Formerly Instructor in Oral Surgery, University of Pennsylvania. With 259 Illustrations. St. Louis: C. V. Mosby Company, 1918. Price, $2.50.

The Treatment of Cavernous and Plexiform Angiomata by the Injection of Boiling Water (Wyeth Method). By Francis Reder, M.D., F.A.C.S., Visiting Surgeon to City Hospital; Consulting Surgeon to St. John's Hospital and Missouri Baptist Sanitarium, St. Louis. Illustrated. St. Louis: C. V. Mosby Company, 1918. Price, $1.50.

Oral Sepsis in Its Relationship to Systemic Disease. By William W. Duke, M.D., Ph.B., Professor of Experimental Medicine in the University of Kansas School of Medicine; Professor in the Department of Medicine in Western Dental College; Visiting Physician to Christian Church Hospital; Consulting Physician to Kansas City General Hospital, Kansas City, Mo., and to St. Margaret's Hospital, Kansas City, Kan. With 170 Illustrations. St. Louis: C. V. Mosby Company, 1918. Price, $2.50.

Emergencies of a General Practice. By Nathan Clark Morse, A.B., M.D., F.A.C.S., Surgeon to Emergency Hospital, Eldora, Iowa; District Surgeon, Chicago Northwestern Railway, Minneapolis and St. Louis Railway; Ex-President Iowa State Association of Railway Surgeons; Ex-Vice President, Pan-American Congress; Fellow American Medical Association; Member of the Society of Clinical Surgeons of North America; Author of "Postoperative Treatment." With 251 Illustrations. St. Louis: C. V. Mosby Company, 1918. Price, $4.50.

The Practical Medicine Series. Comprising eight volumes on the year's progress in medicine and surgery. Under the general editorial charge of Charles L. Mix, A.M., M.D., Professor of Physical Diagnosis in the Northwestern University Medical School. Volume I. General Medicine. Edited by Frank Billings, M.S., M.D., Head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago. Assisted by Burrell O. Raulston, A.B., M.D., Resident Pathologist, Presbyterian Hospital. Series 1918. Chicago: The Year Book Publishers. Price. $2.25.

Infection and Resistance. An Exposition of the Biological Phenomena Underlying the Occurrence of Infection and the Recovery of the Animal Body from Infectious Disease. By Hans Zinsser, M.D., Professor of Bacteriology at the College of Physicians and Surgeons, Columbia University, and Bacteriologist to the Presbyterian Hospital, New York. Major, M. O. R. C., U. S. Army. With a Chapter on Colloids and Colloidal Reactions by Professor Stewart W. Young, Department of Chemistry, Stanford University. Second Edition Revised. New York: The Macmillan Campany, 1918. Price $4.25.

BOOK REVIEW

THE SURGICAL CLINICS OF CHICAGO. Vol. 2, No. 2 (April, 1918), paper, pp. 227 to 534. Philadelphia and London: W. B. Saunders Company.

In a previous book notice, The Journal has given its opinion of the indisputable value of this publication, which comes bimonthly from the well known Philadelphia medical publishing company. The present number contains, among other interesting clinics, several which are very serviceable guides for surgeons in military life. That on spinal accessory-facial anastomosis for gunshot injury gives an excellent account of the technic of this interesting operation. It would have been more satisfactory to the reader, however, had Dr. Albert E. Halstead delayed the publication until he could report on the result of the procedure. This criticism does not apply to the excellent paper by Dr. D. B. Phemister on osteoplastic repair of mandibular defects after excision for fibroma. His clinical lecture reports the result after a considerable lapse of time, and also contains valuable suggestions based on laboratory studies. Tenoplasty, craniectomy and neuroplasty are also represented in a way to stimulate good surgery in the battle areas of France, Belgium and Italy. The Surgical Clinics of Chicago print, at the head of each essay, a short abstract of the contents. A most excellent idea of the editor is this. It facilitates selective perusal. J. B. R.

MEANING OF "CAMOUFLAGE"

What does "camouflage" mean literally; what language does it come from, and how is it pronounced? Ans.: Word is French and originally meant confusing another person by blowing smoke in his face. In this war the meaning has been vastly enlarged, so as to apply to all means of concealing, screening, or disguising guns, roads, buildings, troops, ships, etc. Now also applied figuratively to any scheme of mild deception, such as a woman powdering her face, a farmer putting biggest apples in top of barrel, etc. Accepted pronunciation is based on French—"cam-oo-flahzh," with accent on "cam."

SOCIETIES

PHILADELPHIA LARYNGOLOGICAL SOCIETY

Meeting held May 1, 1918

INTERNAL AND EXTERNAL OPHTHALMOPLEGIA. Dr. George W Mackenzie reported a case resulting from an ethmoid and frontal sinusitis due to an injury from a ball. The palsy of the third, fourth and sixth nerves was due to a toxemia, which was relieved by a Killian operation. The optic nerve escaped injury. The patient improved following the operation.

Dr. Fielding O. Lewis described a case in which the patient, a male 45 years of age, complained of inability to speak and swallow. Examination revealed a tumor-like mass at the region of the frenum of the tongue, which resembled an angioma. A section, removed by fulguration and snare, proved to be lingual thyroid.

OZENA. Papers on this subject were read by Drs. H. A. Schatz and Matthew Ersner, who reported their experience with the preparation and use of vaccine, and the results of serologic, antigenic and food anaphylactic tests. These reports were not as enthusiastic as reports by other men.

Dr. Sidney L. Olsho demonstrated a case of a male adult with extreme posterior extension of the frontal sinus with symptoms of nonaeration.

HERMAN B. COHEN, Reporter.

PITTSBURGH ACADEMY OF MEDICINE

Meeting of March 12, 1918

ACUTE SUPPURATIVE OTITIS MEDIA. Dr. C. C. Sandels: Acute purulent inflammation involving the middle ear is of such frequent occurrence and is so often accompanied by serious or fatal complications that it becomes a subject of considerable interest not only to the otologist, but to the general medical man as well. When we consider the close proximity of this organ to the brain structure, and the rather feeble barriers which separate the two, it is rather remarkable that the infective process does not more frequently invade the cranial cavity.

The causes leading to acute infection of the tympanic cavity are considered as predisposing and exciting. Chronic inflammatory diseases of the nose or nasopharynx, nasal obstruction, enlarged tonsils and adenoids and general lowered vitality or resistance on the part of the patient may be considered as predisposing factors. As exciting causes may be mentioned the acute exanthemata, any of the acute infections, acute coryza, influenza, typhoid fever, pneumonia, tonsillitis, etc. Swimming, diving and the nasal douche which is used by throwing the head backward, permitting the fluid to enter the eustachian tube and reach the middle ear, carrying with it infected mucus from the nose or nasopharynx, are not uncommon causes.

The onset of the disease is usually sudden with a feeling of stuffiness or fulness in the ear, with an occasional sharp, shooting pain. As the pressure symptoms develop the pain becomes intense and agonizing, radiating over the entire side of the head. There is generally marked impairment of hearing. In adults the temperature is usually but slightly above normal. In children, however, the condition may begin with a chill and temperature ranging from 102 to 104 or 105 F. The entire ear may become tender to the touch; marked meningeal symptoms may be present and gastro-intestinal disturbances are not uncommon. In the very young, tugging at the ears, rise in temperature and tossing of the head should always be looked on with suspicion and lead to an examination of the ear. And here I might state that I believe every general practitioner should be equipped with the necessary appliances for bedside examination and should be qualified to deal intelligently with the condition present.

Another point we should bear in mind is that the pain and symptoms of ear involvement may be overlooked or unsuspected. Particularly is this true if the above named condition occurs during the course of some of the graver acute infections, and it is not unusual to have symptoms referable to the ear so slight or so masked by the graver constitutional condition that it is only discovered when pus is seen at the opening of the external meatus or the stain appears on the pillow.

In most cases running a normal course spontaneous rupture of the drum membrane usually occurs in from six to eighteen hours. But we must also remember that suppuration may continue in the middle ear over a period of days or even weeks without discharge or with practically no pain to the patient. I have seen such cases—in one of which the patient gave a history of severe earache lasting for four or five hours, four weeks before he presented himself for examination. He had no pain following the first acute earache but had noticed some tenderness over the mastoid bone for some days. At no time had there been any discharge. The deafness was marked and it was for this and a tender swelling over the mastoid that he sought relief. By the aid of the postnasal mirror a free flow of pus could be seen coming from the pharyngeal end of the eustachian tube. A second case presented symptoms almost identical with the above except the initial pain lasted about twenty-four hours and had occurred about six weeks prior to the patient's coming under observation. He had no discharge, and there was no pain following the initial earache. In neither case was the mastoid particularly tender. In a third case the patient gave a history of having been taken with severe pain in the ear three weeks before examination. She had consulted a specialist who had incised the ear twice but found no pus. Opiates had been used for the relief of pain which had been almost unbearable. The pain had been so severe at night that sleep was impossible. A fluctuating mass was present over the region of the mastoid which was intensely tender. The drum was dull and soggy in all these cases, the acute symptoms having disappeared. There was some bulging but not markedly so. Operation on these cases showed a perforation of the outer cortex with escape of pus into the soft tissues over the mastoid and extensive involvement and destruction of the cells. Two of the above cases occurred in boys aged 17 and 18 years respectively, and the other in a young married woman about 30 years of age with two healthy children. There was no evidence of syphilis or tuberculosis in any of these cases.

The treatment of this condition may be nonsurgical or surgical depending upon the condition present at the time of examination. If there is little or no temperature, the pain not severe, but slight inflammation of the drum membrane and no bulging, we may attempt to prevent the condition passing to the suppurative stage. This consists in putting the patient to bed in a well-ventilated room, restricting the diet, free purgation and the placing of an ice bag or hot water bottle to the affected ear. The administration of opiates is, I think, to be condemned as they are of no therapeutic value and only mask the symptoms and deceive us as to what is actually taking place in the middle ear. This line of treatment, however, will prove of benefit in a very small proportion of cases and it is a question if most of these cases which do not go on to suppuration were not a mild type of infection which would have cleared up if no treatment had been given.

In cases of acute purulent middle-ear inflammation which have not perforated but with evidence of retained secretion manifest by a diffuse or localized bulging of the drum membrane, the treatment is surgical and our first objects are relief of the patient, evacuation of the pus and the prevention of complications. This can best be accomplished by free incision.

Rupture or incision is generally followed in a few minutes by marked relief to the patient. The pain subsides and the intense pressure disappears. The stuffiness or fulness in the ear and deafness continues, however, until the discharge ceases and the intratympanic structures regain their normal tone. It sometimes happens that rupture or even paracentesis does not completely relieve the patient and the symptoms continue with more or less severity. This may be due to several causes in case of perforation. The opening may be too small for free drainage, or it may have occurred in the lower part of the membrana tensa draining the lower part of tympanum but failing to relieve the process going on in the attic or vault, as these two cavities are not infrequently completely separated during the course of an acute involvement by inflammatory thickening. If this should occur the perforation should be enlarged and the incision extended well up into the attic. Cases in which the pain and fever persist in spite of the best possible efforts at drainage are generally looked upon as a more serious type and such cases frequently require an early operation, even in the absence of distinct mastoid involvement.

The local treatment following the evacuation of the middle-ear cavity consists in confining the patient to bed, regulating the diet and the application of an ice cap or hot water bottle to the ear. The most important part of the after-treatment in these cases is cleanliness. The external canal should be kept free of pus and this is best obtained by frequent irrigation with some mild antiseptic solutions. Those most commonly used are boracic acid or normal saline solution. The irrigation should be used at intervals of every 2 or 3 hours depending upon the profuseness of the discharge. An irrigating can or fountain syringe containing two quarts of the solution should be placed from two to three feet above the patient's head and a quart at least of this should be allowed to flow into the ear. If this should cause pain it should be discontinued. The cleansing of the ear is of the utmost importance and should be done in a careful and thorough manner. This method is far superior and will be followed by much better results than those obtained with the small rubber syringe so frequently used. After irrigation the ear should be dried and a small piece of sterile cotton or gauze placed gently in the external meatus. This should be changed as soon as it becomes soiled which, in a profuse otorrhea, will be every few minutes. It may at times later on in the disease seem desirable to employ the wick treatment which consists in placing a wick of sterile gauze against the opening in the membrane and the filling of the entire canal loosely with gauze. The gauze must be sterile and the entire procedure must be antiseptic. The auditory canal having been previously cleansed, a piece of sterile cotton is placed in the concha and the dressing is not disturbed for from twelve to twenty-four hours. At the end of this time it is removed, the ear syringed and a fresh dressing applied.

Acute suppuration usually terminates in from a few days to two or three weeks with cessation of the discharge, healing of the drum membrane and a return to normal of the intratympanic structures; or it may pass into the chronic suppurative form with its accompanying disagreeable symptoms and its dangers to life and hearing. It may extend to the mastoid necessitating surgical treatment of this part; it may involve the labyrinth and result in partial or complete deafness, or it may pass to the cranial cavity and lead rapidly to a fatal termination. In cases where the discharge has persisted over a period of two or three months with no evidence of abatement, even though no mastoid symptoms are present, the establishing of thorough drainage by opening the mastoid may be indicated.

Serious or fatal complications are not uncommon and may occur at any time during an acute middle-ear suppuration. I have within the past two years seen four cases of purulent meningitis, two cases of sinus thrombosis, and two cases of complete and permanent deafness due to destruction of the labyrinth. In none of these cases had symptoms referable to the ear existed over six weeks.

Dr. Bixler in discussing: Dr. Sandel's suggestion that every practitioner should be equipped to examine ears is well timed. In children suffering from otitis media one often finds very few symptoms, occasionally only loss of appetite. Physical examination may show loss of cone of light and dulness. If these ear drums are opened a few drops of serum may be discharged and the patient get well.

The Dietetic Management of Chronic Infectious Arthritis.—Dr. C. B. McAboy: Diet has always been given a very important place in the treatment of "rheumatism"; in fact, it has been considered perhaps the most important factor and it has even been assumed to have curative value. If one consults various writings on the subject one finds no good reason given for the supposed curative value of diet and no very specific instructions as to what diet is curative, the information given being summed up in the exclusion of red meats (Pemberton).

In view of our rather recent conception of the etiology of arthritis, it would seem pertinent to inquire whether diet per se has a curative value, and if not what we can hope to accomplish through dietetic measures. To answer this question requires no argument. If we accept the general belief that chronic arthritis is always due to a focus of infection either active or latent, and I believe we do, then diet can have no specific curative effect. The second part of the question can equally be answered without argument, that the value of diet in arthritis is the same as in any chronic infection such as tuberculosis and the problem is pretty much the same in all instances; namely, raising the patient's level of resistance.

If one considers arthritic patients from the standpoint of their nutrition they naturally fall into two classes, the well nourished and the poorly nourished. The well-nourished, often over-nourished, patients present a difficult problem which one hardly knows how to attack. Some of these patients suffer much from intestinal putrefaction and in them a diet directed to limiting that condition has seemed to be of some value. Other cases seem to improve on a low diet but one must exercise care not to carry the reduction of the diet to a point at which the patient's level of resistance is lowered. Most cases do not seem to respond to any dietetic treatment. In the poorly nourished patients the problem is much more easily stated but not easier of solution. It is simply to raise the patient's resistance without at the same time adding to his toxemia. Here again the cases divide themselves quite naturally into two classes, viz., those patients who have a marked tendency to intestinal putrefaction and do not bear forced feeding well and those without any tendency to intestinal putrefaction and who bear forced feeding well. (1) The poorly nourished patients who do not bear forced feeding present one of the most difficult and discouraging of problems. There does not seem to be any dietary formula which does well in these patients. Sometimes by beginning with a liquid diet and cautiously increasing to a full diet one is successful in improving the resistance of these patients. My own experience has been most discouraging and I consider the prognosis in these patients very unfavorable. In general terms it may be stated that the arthritic patient that cannot or will not eat cannot recover. (2) The poorly nourished patients who bear feeding well are the most favorable and at the same time the easiest to feed. There need be no restriction in the variety or the quantity of the food and the only care that need be exercised is not to overtax the digestion. These patients can be fed on the same principles as a case of tuberculosis and the results are most satisfactory.

The conclusions to which I wish to call attention in this short paper are (1) that diet of itself has no curative value in chronic infectious arthritis; (2) that each case must be studied individually and the diet ordered accordingly. Much cannot be hoped for from any dietary formula, however carefully devised and prepared, nor do such formulas hold out much hope for the future.

Dr. Cohoe in discussing: I wish to ask Dr. McAboy if he has had experience with Dr. Pembcrton's method of feeding in these cases. Every case that I have tried with Pemberton's method has been a failure. I now give a liberal diet and do not withhold red meats.

Dr. Emmerling: There can be no specific diet for chronic infectious arthritis. One should look after the nutrition of the patient and see to it that drugs do not interfere.

Dr. McAboy, in closing: I have had no results with the Pemberton method except that patients with poor nutrition were made even worse.

Meeting of March 26, 1918

Blood Pressure. Dr. C. O. Anderson: By blood pressure is meant the pressure of the blood in the vessels within which it is contained. Systolic is the greatest pressure exerted and takes place during systole of the heart. The diastolic is the lowest pressure and ocurs in the cardiac cycle just at the beginning of the systole; or in other words, at the end of diastole, the time when most of the blood has passed on through the capillaries into the veins. Pulse pressure is the difference between the systolic and the diastolic pressure. It has been only in the last five or six years that the importance of accurate blood pressure readings in their diagnostic, prognostic, and therapeutic applications to general medicine have begun to be appreciated, and their value realized by the general practitioner.

As to the instrument for taking blood pressure, we have many forms and kinds, but they all record the pressure in millimeters of mercury. We have two methods of taking palpation and auscultation, the latter being more accurate.

Blood pressure depends on four main factors, cardiac strength, peripheral resistance in the vessels, the elasticity of the vessel walls and the volume of blood. Beside these there are several other factors, but they are not of great clinical importance; viz.: the viscosity of the blood, etc.

When there are no pathological changes the following factors affecting the blood pressure are to be taken into consideration. The cuff should be on a level with the heart; otherwise the correct reading is lowered or raised by the effect of gravity on the column of blood according to whether the constriction is above or below the level of the heart. Always have the patient in the same position and at ease. When reclining the pressure is 8 to 10 mm. higher than when in the sitting posture. There is a moderate rise in systolic pressure and pulse pressure after meals and the pulse rate is increased. Breathing, deep and forced, raises blood pressure during expiration often as high as 10 mm. and lowers pressure during inspiration. Sleep lowers pressure. Nervous and mental stimuli, such as anger, pain, emotion, etc., raises pressure. Exercise causes a rise in the maximum systolic pressure and an increase in pulse pressure. The pulse rate is also increased.

Blood pressure in diseases may be high (hypertension), or low (hypotension), as the case may be. Hypertension may be due to drugs such as adrenalin, ergot, etc. Diseases causing high blood pressure are arteriosclerosis, angiosclerosis, nephritis, apoplexy, head injuries, agina pectoris, aortic regurgitation (if the heart muscle is healthy), idiopathic epilepsy is associated with slow pulse and high pressure; gout, plumbism, exophthalmic goiter, pressure may be high or low, depends on condition of heart muscle. Hypotension: the causes are the acute infectious diseases, typhoid fever, pneumonia, anemia, intestinal infections, myocarditis, hemorrhages and shock, Addison's disease, and many other causes too numerous to mention here.

Case 1.—I was called, May 9, 1916, to see Mrs. S., aged 46, who gave a history of having worked hard during preceding week cleaning house. While dressing to go out for the evening she fell over on the floor in a faint. When I saw her a few minutes later she was semi-conscious, blood pressure 250.

respiration slow and almost Cheyne-Stokes in character. Patient was put to bed, with icebag to head, and rest. Following morning patient had regained consciousness but speech was slow. No sign of paralysis. On going into the history of the case I found that she had been treated for three years for high blood pressure. She menstruates only every three months and these attacks occur just before menstruation. Urine was normal. Other physical findings were negative. With rest in bed, diet, and moderate doses of KI, patient slowly recovered. One week later patient menstruated, then her blood pressure gradually dropped to 180, and in three weeks time she was able to be up and about the house; she was kept on restricted diet and one dram of magnesium sulphate each morning. On Aug. 15, 1916, I again called to see this patient. She had been in the back yard working in her garden when her family found her lying unconscious on the ground and had carried her into the house on my arrival. Pulse rate and temperature were normal, blood pressure 260, patient cyanotic. On bleeding the patient, drawing off 32 ounces of blood, blood pressure dropped to 240, and patient became semi-conscious. I left the house and about one-half hour later was called back to the home, patient was in a convulsion. A doctor who lived near was called before my arrival, made a diagnosis of uremic convulsion. A catheterized specimen of urine was normal, both microscopically and macroscopically. I gave the patient 1/6 grain of morphin sulphate by hypodermic. In a short time she quieted down and by next day was feeling good. She had another three weeks' rest in bed and diet and then she was up and about again.

October 12 she reported at my office, with blood pressure 160; October 30, blood pressure 180. November 22 she reported again; blood pressure was 260, followed in a few days by another attack; she menstruated again. Repeated examinations of urine under microscope were negative.

Christmas time her brother, an intern in a Cleveland hospital, was in the city to visit her. He took a sample of urine with him and had it analyzed in their laboratory; it also was negative in every respect. In March, 1917, this patient went to a Cleveland hospital for treatment, remaining there two weeks. They reported casts and albumin present in her urine, making a diagnosis of chronic nephritis and a bad prognosis, gave her hot packs daily, and sent her home at the end of two weeks telling her that her blood pressure had dropped to 160. I was called to see her the day following her arrival home and found her with a blood pressure of 240, put her back to bed; urine at this time had many casts, granular and hyaline, and a moderate amount of albumin. Under rest in bed and diet, urine cleared up; patient has not been seen since last July, but is in same condition. Diagnosis: an early interstitial nephritis with increase in blood pressure due to menopause.

Case 2.—Mrs. X., aged 58, came to my office July, 1917, complaining of stinging pains in legs and arms. Physical examination revealed weight 230 pounds, marked arteriosclerosis, blood pressure 260, urine negative. Patient put on diet, magnesium sulphate daily, and moderate doses of KI. Blood pressure gradually dropped to 180. Six weeks later patient reported to my office: blood pressure was still 180, tingling sensation all gone and feeling fine. She had lost 30 pounds in weight. She then ceased to report to us. Six months later, according to another physician, shortly after rising one morning, she fell over unconscious and died in about one hour.

Case 3.—Mr. X., a man 55 years of age, weighing 260 pounds, complained of rheumatic pains. Physical examination showed arteries slightly hardened, other physical signs negative. Urine was negative, blood pressure 204. Patient put on KI and nitroglycerine compound plus magnesium sulphate each night. Blood pressure dropped to 180, patient lost 40 pounds in weight, rheumatic pains have disappeared, and patient feeling fine.

Dr. J. A. Lichty, in discussing: I have often noticed high blood pressure at menopause, which I thought was probably due to the internal secretions at this time. For these patients with high blood pressure I have often found small doses of chloral frequently repeated, such as gr. 2½ three or five times a day, helpful. In many cases with high blood pressure and disturbing circulatory symptoms I have used digitalis with good results.

Dr. I. J. Moyer: In most cases of high blood pressure evidence of nephritis is usually present. Three organs are affected, the brain, heart and kidneys. I often obtain temporary relief from use of nitrites.

Dr. J. I. Johnston: Patients with high blood pressure are always a pathological risk. I have never found KI helpful, but have used digitalis to advantage.

Dr. F. T. Billings: I feel as Delafield and Janeway pointed out years ago, that every case of blood pressure of 200 or over has kidney involvement. The urine of these cases usually shows low specific gravity, increased amount for the 24 hours, with variable casts and albumin.

Case Report of Morphinism Terminating in Uremia. Dr. Ellis M. Frost: Mrs. M. M., aged 63, housewife, was seen first Oct. 7, 1917. This patient had been brought to a nonmedical institution for the treatment of morphin addicion of long standing, had been there two weeks previous to this date in the charge of a competent trained nurse and was considered to be progressing well and had no morphin for two days. She went to bed feeling as usual the night before I was called and slept till about 3 a. m. when she had one severe general convulsion, recovered from this and slept till 7 a. m. when convulsions began again and recurred at intervals of 3 to 5 minutes, lasted 1½ to 2 minutes. These had been going on for an hour when I first saw her. They were general clonic type, in intervals body inclined to left side of bed, eyes both deviated to right, pupils equal and dilated, no reaction to light. Pulse was rapid, regular and high tension, blood pressure 190 to 100. With venesection 600 c.c., blood pressure was reduced to 115 to 90. Pupils became very contracted, equal and no light reaction. Convulsions continued at longer intervals for a half hour then stopped. Breathing became Cheyne-Stokes' type, pulse very thready. Urine had been voided as usual before retiring. There had been some involuntary urination during convulsions and three drams were catheterized, showing specific gravity 1.028, very heavy cloud of albumin, no sugar, trace of acetone, many hyaline and coarsely granular casts. About noon she was removed to St. Francis' Hospital in apparently hopeless condition. Diagnosis uremia.

History, obtained later, showed that patient had had the usual infections of childhood, including scarlet fever and diphtheria. Since then nothing till 12 years ago some painful, abdominal condition called pelvic peritonitis. Then began use of morphin and in recent years had taken 10 to 20 grains a day. She had no uremic symptoms before and did not know she had kidney trouble; had occasional headache and specks before eyes, but had voided regularly 50 to 60 ounces. Had never been examined. Blood pressure had been 160 to 170.

Family history: Married 35 years, had one child, who died at 4 years, with meningitis. Social history: Had been active in social and church work, and a physician in her town who had known her for years intimately told me he knew nothing of her addiction.

Physical examination showed patient fairly well nourished, pasty complexion, marked arteriosclerosis, no edema; eyes sharp, marked arcus senilis; teeth mostly false but her own were poor with marked pyorrhea and gingivitis; thyroid negative; lungs negative. Heart showed slight hypertrophy, sounds were slight roughening of first at apex and aortic area. Aortic second sound was accentuated. Abdomen was negative.

Special examinations: Eyes, O. D. small retinal hemorrhage and slight sclerosis retinal arteries. No other significant fundus change. Heart electrocardiogram, Oct. 23, 1917, shows normal origin and conduction of impulses; toxic myocarditis.

Laboratory: Blood hemoglobin 88; red blood corpuscles 5,190,000; white blood corpuscles 8,500. Differential no significance. Wassermann negative.

Renal function: phenolsulphonephthalein, Oct. 12, 1917, first hour 50 per cent., second hour 25 per cent.; Oct. 26, 1917, first hour 25 per cent., second hour 35 per cent. Each 12 hours' excretion of urine was measured and examined; daily amounts, at first could not be measured on account involuntary urination, later became 50 to 70 ounces. Specific gravity 1.017 to 1.024. Albumin decreased from heavy cloud to very faint trace. There were traces of acetone in a few specimens. Microscopically, for three days urine showed numerous hyaline and granular casts, no red blood corpucles. Cast disappeared after fourth day in hospital.

Active eliminative tretament was instituted, with entroclysis; glucose and sodium bicarbonate. She improved, though coma continued 30 hours. Skin sweat profusely, almost continuously without diaphoretic measures. Eyes showed tendency to turn upward or outward and pupils contract and dilate frequently and rapidly with no apparent cause. Blood pressure taken several times a day, maximum 155 to 95; minimum 125 to 80. Apparently more urine was voided with involuntary bowel movement. After deliberation, it was decided to use small doses of morphin at regular intervals. Several doses had been given at request of husband who was a physician when she was almost in collapse with positive beneficial results, but we hesitated to put her back on it. We started with gr. ⅛ t.i.d., later reduced to gr. 1/16 and finally cut it out. Patient continued to improve, became very rational, took prescribed treatment and diet well. The urine increased in quantity and improved in quality. Occasionally there was a collapse associated with profuse cold sweat which morphin invariably relieved. Atropin could not be given because of marked idiosyncrasy for the drug.

She retained the mental attitude of the morphin addict, was untruthful, undependable, irritable, and coaxed for the drug and was extremely ugly when she could not get it. There were no more convulsions. The left pupil remained slightly smaller than the right and both continued to change size repeatedly and suddenly. Patient went home on October 27 (after three weeks) in rather good condition physically and off morphin but mentally very uncertain. Several weeks later became stuporous, developed some consolidation in left lung, apparently was uremic, but the quantity of urine was good and showed no definite chemical or microscopical change. She recovered from this but developed a mild dementia and died several weeks later, about three months after the initial convulsions.

Dr. C. H. Henninger reported a case of spasmodic torticollis in a man 78 years old, following an attack of rheumatic arthritis. Twenty years previously patient had a fall, striking his head and shoulders. On recovery returned to work in coal mine and continued to work up to his recent attack of rheumatic arthritis. X-ray pictures taken at St. Francis' Hospital showed fracture of the third cervical vertebra, which was probably sustained at the time of his accident twenty years ago.

Dr. J. D. Singley reported a young man who had fallen a considerable distance striking his head and shoulders, and showing paralysis and paresthesia of left arm. X-ray pictures showed fracture of the fourth and fifth cervical vertebra. Paralysis has improved.

Dr. R. H. Boggs reported patient showing fracture of odontoid process received while being treated by osteopath.

Dr. J. I. Johnston reported an alcoholic pneumonia in which the patient died suddenly during an examination on the fourth day following admission. Necropsy showed fracture of the fourth cervical vertebra, probably sustained in a fall on the street before admission to the hospital. Dr. Johnston also reported a case of hypertrophic goiter without Basedow's syndrome but with pressure symptoms. At the time of partial thyroidectomy enlarged thymus could be seen beneath sternum.

Frederick B. Utley, Secretary.

SENIOR MILITARY MEDICAL ASSOCIATION

Meeting held Friday, June 7, 1918, 8:30 p. m., at the City Club, Philadelphia, Dr. James M. Anders, in the Chair.

Dr. Anders: Dr. Keen, who is absent because of attendance at the meeting of the American Surgical Association, has placed in my hands an appeal to members of this organization for membership in the Volunteer Medical Reserve Corps.

The Senior Military Medical Association is about to hold its last meeting tonight. The birth of this organization occurred in Philadelphia about eighteen months ago and, while its career has been brief, it has been a successful one, opening, as it did, the way to the formation of a national reserve organization. The Association numbers about 300 members. This is remarkable when one contemplates that practically all of the members are men of 55 years of age or over, above the so-called military age. Its phenomenal growth, it seems to me, evidences the loyalty and patriotism of the physicians of Philadelphia over military age who are willing to serve at home in the winning of this horrible war. The Senior Military Medical Association has had a large vision shown by the fact that it has brought about a national organization under the auspices of the United States Government—the Volunteer Medical Service Corps. Of its work you will hear further from its president, Dr. Edward P. Davis. As all know, the active military service in the present great crisis has drawn heavily on the medical profession of America. Surgeon-General Gorgas stated that at the present time twenty thousand physicians belong to the Medical Reserve Corps of the U. S. Army. It is interesting and gratifying to note that more than 2,000, more than one-tenth of this total, come from the state of Pennsylvania, and that upwards of 760 come from the city of Philadelphia alone. Recently the Surgeon-General has called for 5,000 more physicians to join the Medical Reserve Corps, and we may confidently believe that these will soon be forthcoming. There can be no question that the patriotism of the profession of America will meet the needs of a suffering world, and if the flower of young manhood of the profession cannot furnish a sufficient number of physicians to meet the need of the country the Surgeon-General may call on the Volunteer Medical Service Corps, may call on the physicians over military age, with the assurance that they will be willing and eager to join the colors. And, my friends, if the tyrant Hun thinks that by dropping bombs on the hospitals of our allies he shall deter the physicians of America from entering the military service of their country, he does not know the material of which American medical patriotism is made. There is before the American people today, not only before the medical profession of America, but before the entire population of this great country, but one job —the job of overthrowing the Hun. We have with us the founder of the Senior Military Medical Association, Dr. William Duffield Robinson, and I should like to say that not only has this Association opened the way to the Volunteer Medical Service Corps, but has led to the formation of six similar organizations on the part of nonmedical men for the service of the United States Government. I will ask whether he will not say a few words with reference to the changing of the old organization to the new.

Dr. William Duffield Robinson: I felt that in the medical men not eligible to the Medical Reserve Corps we had an enormous asset, and after conference with Major Codman and others there was formed the Senior Military Medical Association. In the Volunteer Medical Service Corps I feel that a larger activity is possible. Dr. Edward P. Davis can tell you more of its scope than I.

Dr. Edward P. Davis, President, Volunteer Medical Service Corps: In the present state of affairs the motto of the silver dollar is appropriate: "In God we trust." But, the devil is to pay, and I need not utter the statement that "force without limit" is our only recourse; and, that "force without limit" comprises all and every person and thing in this world. We are warring against the greatest despotism of history; and, if at the close of this present struggle attempts are made to settle matters in the same old way, this war will be only one of others, ending in the extermination of the human race on this planet. But to that council table at the close of the war comes a new member, the young giant of the Western world, and he speaks in plain and simple terms stating that the day of diplomacy by deceit is over; that there must be a court of arbitration, a league of nations, armaments limited to a police force only.

I have the honor to speak to you tonight for the Council of National Defense and for the government in regard to the Volunteer Medical Service Corps, comprising those who by reason of certain disability or circumstances cannot serve in the Medical Reserve Corps. I welcome most heartily to this Corps our medical women. We consider your presence with us of such importance that a woman physician, Dr. Strobel, is in the office of the Council of National Defense to look after your interest. An instance of the work of the Corps is given in the need in manufacturing plants of some one to take the place of the surgeon stationed there who must go to active service. Some man who cannot enter the Medical Reserve Corps can serve there when the surgeon in charge must go to the front. Again in our shipbuilding plant there is a Medical Reserve Corps officer who needs help and there is not a man of suitable age for the Medical Reserve Corps who is willing to accept the position of traveling through the country inspecting shipbuilding plants. Requests for two physicians for such positions are now in my hands. Already Surgeon-General Blue has asked for members of the Volunteer Medical Service Corps for certain sanitary work. These things are pressing on us at this moment. As the medical men go into the Army the country must be cared for. Hospitals are asking whether in view of their crippled condition members of this Corps may not fill their depleted ranks in the clinics. One of the staff of one of our largest and oldest hospitals said, "Possibly the women will help us."

We shall proceed in the selection of members of this Volunteer Medical Service Corps with a great deal of care. We propose to divide the American medical profession very sharply into two groups—those who are willing to exercise every force in this crisis, and those who are slackers. We propose to make it impossible for any reputable medical man or woman in this country to escape inclusion in one of these groups. Those of us who cannot go to the front have desired official recognition, and we shall obtain it. The insignia of the Corps has been approved by Secretary Baker and the Council of National Defense. We are receiving hundreds of applications daily. Application blanks were sent first to those persons who had been rejected for physical reasons from the Medical Reserve Coprs, then to the medical societies of the country. They should be carefully filled out, signed and mailed to the Central Governing Board, Medical Section, Council of National Defense, Washington, D. C. It is requested by the clerks in Washington that if circumstances permit you will write with a typewriter.

Those eligible for membership in the Volunteer Medical Service Corps are all doctors who would be accepted for the Medical Reserve Corps were it not for physical disability, over military age, essential public need. Women physicians without reference to age are eligible. Each state has a committee of the Medical Board of the Council of National Defense for the recruiting for the Corps.

The badge of the Volunteer Medical Service Corps will be furnished members of the Corps. It will be loaned by the government that it may never be given away by the person having it.

The Corps gives no rank. We are content to be citizens of the United States trying to do our best. For certain service for the government it may be necessary to give a temporary rank terminating with the completion of the work.

No member will be "ordered" to do any service. Members are not under orders as is a man holding a commission. He may be requested, with the stress placed on the word "requested" to accept service commensurate with his qualifications and ability. Hence the term, Volunteer Medical Service Corps.

WILLS HOSPITAL OPHTHALMIC SOCIETY

Meeting of May 6, 1918

Retinitis Proliferans: Dr. William Zentmayer said that this condition is of extreme interest and importance because of the still unsatisfactory status of the etiology of many of the cases of vitreous hemorrhage which occasion it and because of the very unfavorable prognosis. In the cases of relapsing vitreous hemorrhage in juveniles the bleeding occurs in two forms which often present themselves in opposite eyes of the same individual; one, as a massive hemorrhage which diffuses itself throughout the vitreous and prevents light reaching the fundus, and the other, as multiple retinal hemorrhages which gradually escape into the vitreous. It is probable that there are several causes for the hemorrhages; tuberculosis, syphilis, gout and endotoxins, diabetes, etc. Other factors, some related to and others independnt of these general causes, are blood pressure and alterations in the blood affecting its coagulability. The latter conditions are inconstant. In some cases the blood pressure is low, in others high. In some cases the coagulability is too rapid, in others too slow. According to Collins the coagulability is raised and this leads to the formation of thrombi in the venules which rupture as the result of the *vis a tergo*. Oguchi studied the development of so-called retinitis proliferans experimentally in rabbits by injecting blood into the vitreous. He found that the blood was removed from the eye partially by way of the central vascular canal. The greater part, however, was disintegrated in situ and taken up by migratory cells, which originated from the ciliary processes and the connective tissue network of the papilla, and subsequently traveled in part to the papilla and in part to the inner surface of the retina. The mechanical irritation caused by these cells resulted in glial hyperplasia of the retina together with a migration of retinal pigment. He concludes that true retinitis proliferans arises from a connective tissue formation derived from the perivascular tissue of the papilla. There must be contact of the vitreous hemorrhage with the surface of the papilla.

Suguvuma, from anatomical studies and experimentation, concludes that the new-formed tissue comes from the glial fibers of the retina as well as from the connective tissue subsequent to the hemorrhage, and believes that in all probability it may exist without prior vitreous hemorrhage.

According to Collins and Mayou, the steps of the process are as follows: if the coagulation of the blood is high coagulation takes place more rapidly than usual and absorption takes place slowly. The corpuscles discharge their hemoglobin, the stroma is broken up and cholesterin is formed. The fibrin either is absorbed or organizes. The endothelial cells from the blood-vessels spread into the vitreous and bands of connective tissue form.

Dr. Zentmayer has recently observed the following cases:

Case 1.—A. B., male, aged 18. (This case has been previously reported in brief.) Thorough physical examination was negative. The von Pirquet test was negative. The blood coagulation time was normal. When first seen in February, 1917, the left eye had light perception. The vitreous was so opaque that no reflex was obtained from the pupil. The right eye had nearly normal vision and there were numerous hemorrhages in the retina in the region of the ora serrata. By September, 1917, the vision in the left eye was nearly normal, and vision in the right eye 15/150. At the present time, V.O.D. = 15/100, and V.O.S = 15/10. In the right eye there are dense fibrous bands forming a complicated network with new blood vessels throughout the vitreous. He has recently had an attack of epistaxis.

Case 2.—E. B., female, married, aged 33. (Patient of Dr. W. T. Shoemaker.) First seen in May, 1917. Vision, O.D. 20/50, O.S. 1/100. In the right eye there was marked proliferating retinitis. In the left eye the vitreous was filled with hemorrhage. The vision of the right eye had fluctuated greatly, but there had been practically no change in that of the left eye up to the time of using fibrolysin in January, 1918. The Wassermann was negative. No record of tuberculin test can be found. Blood pressure was 115 systolic and 65 diastolic. Coagulation time 12 minutes. Roentgen-rays of sinuses and head were negative.

Case 3.—M. S., female, aged 53, single. V.O.D.= Fingers at 1 meter. V.O.S. = 20/50. Vision has been failing for one year. Has been under treatment for diabetes for past two and a half years, and has gangrene of one toe. In the right eye there is typical retinitis proliferans and in the left eye retinal hemorrhages.

Case 4.—A. S., male, aged 23, was seen in consultation with Dr. P. H. Kleinhans, in April, 1918. V.O.D. = 1/60. V.O.S. = 15/30. In the right eye the central and lower part of the vitreous was so dense with new-formed tissue and hemorrhages that no reflex was obtained. In the left eye there were many retinal hemorrhages in the peripapillary region. The young man was in good health. Physical and laboratory tests negative. Constipated. No epistaxis. Coagulation time normal. One brother supposed to have died of phthisis.

In the first two cases the treatment was much the same. Iron, potassium iodid, or the syrup of iodid. The effect of treatment was uncertain, as under treatment one eye improved while the other grew worse, in two of the cases closely observed.

In the second case, because of the failure of the left eye to improve while the right eye continued to fail, it was decided to try fibrolysin. As the patient lived at a distance, it was deemed expedient also to use every other method which offered any hope at the same time. This made it impossible to assign to any one agent the credit for the slight improvement which resulted. Twelve doses of 2.3 c.c. of fibrolysin were given in the course of one month. At the same time subconjunctival injections of salt and dionin were used. At the end of that time, V.O.D. = 15/50, and V.O.S. = 1/200.

It will be seen that in these three cases there has been no constant finding in the physical examinations. The Wassermann was negative in all. The tuberculin test was positive in one, negative in one, and in one not recorded. Blood pressure was normal in all cases. The coagulation time was normal in two cases and slow in one case. In one case the cause was undoubtedly diabetes.

The treatment should be especially directed to proper living, and particularly to ventilation and food. Drugs should be given according to indications. No remedy is at present known which will arrest the cause of the hemorrhages. The one drug which seemed to give the best results was the iodid of iron in large doses. Fibrolysin is worthy of further trial.

Enucleation Under Local Anesthesia. Dr. William M. Sweet exhibited a man with recurring attacks of iridocyclitis whose left eye was removed under local anesthesia, a cardiac condition preventing the use of ether. The anesthesia was secured by the injection, in the region of the optic nerve, of a one per cent. solution of procain, with five minims of adrenalin solution, 1/1,000 to each dram. A half-curved needle, somewhat shorter than that recommended by Siegrist, was passed along the lower border of the external rectus muscle to the back of the globe, and about two drams of solution injected. The needle was then withdrawn and passed below the internal rectus, and the same amount of solution injected on the nasal side of the optic nerve. In a few minutes the eyeball became proptosed and the conjunctival vessels empty. About five minims was then injected at the point of insertion of each of the recti muscles. There was no pain at any stage of the operation. After removal of the globe, a gold ball was implanted in Tenon's capsule.

Dr. Harold W. How, Secretary.

COUNTY SOCIETY REPORTS

BERKS—JUNE

At its meeting on June 11, the Berks County Society was addressed on "Medical Opthalmology" by Dr. C. W. Banks.

Dr. M. L. Huyett spoke on "The Conservation of the Tonsil." After describing the anatomy of adenoids and tonsils he said that adenoids are filters, they destroy germs deposited in them. In Waldeyer's ring there are 6 tonsils, 1 pharyngeal, 1 lingual, 2 faucial and 2 tubal. The pharyngeal tonsil is in the roof of the postnasal cavity behind the passages and is considered by Frankel the most important protective organ in the body.

To prove the presence of adenoids they must be seen and felt. The pharyngeal tonsil in childhood is a normal structure; its enlargement may be due to fluid distention instead of an increase in cellular elements, for which it is often mistaken. The presence of adenoids is not a fatal disease, no deaths from them having been reported, while thousands have occurred from their removal. The operation is always bloody, dangerous and painful. They grow again after removal, and also disappear spontaneously.

In the faucial tonsil 10 or 12 round or oval nodules are grouped below the walls of the fossulae, which are lined by a mucous membrane. The lingual tonsil sometimes blends with the faucial tonsil; it atrophies at 14 years of age and afterward the base of the tongue becomes covered with adenoid follicles.

We cannot identify the tonsils as lymphatic glands but must consider them as different organs. The faucial tonsil has characteristics not possessed by other tonsils regarding its structure, surroundings, external and internal surface; it is rather inferior, in regard to facilities for absorption, to the rest of the pharynx and nares. It is also covered by a fibrous sheath or capsule which does not cover the other lymphatics. Its vascularity is slight. Its nerve terminations are not well known. The pharyngeal tonsil is the most important organ in the first line of defense of the system against microbic invasion.

It has been proved that the infective germs of spinal meningitis enter the organism through the pharyngeal tonsil after the virulence of the germs has overcome its protective influence. The microbes of acute rheumatism are weakened through the tonsils. Tonsils have not only the function of phagocytosis but also a physiological and biological function. It appears plausible that it secretes an internal principle useful for the development and growth of the skeleton.

The functional relations between the teeth and tonsils are most interesting. Who suggests the wisdom of destroying such organs because once in a while they fail to protect us? Removal is justified when they obstruct or are necrosed or ulcerated. Tonsils give volume, tone and resonance to the voice which becomes impaired on their removal or upon their becoming abnormal. When a tonsil is normal infection from the external surface is rare. Secondary infection through the lymph channel is the usual source. When slightly enlarged or not infected they return to normal. Diseased teeth are a source of enlargement of glands.

Both papers were discussed by the members present.

Clara Shetter-Keiser, Reporter.

BLAIR—MAY

The Blair County Medical Society met May 28, at 9 p. m., in the Lincoln Room, Caum's Café, with President Sommers in the chair and forty members present. The society was honored by the presence of Major Fred Bloomhardt, home on a furlough, the first since June, 1917. Major Bloomhardt was the honored guest at the banquet which preceded the regular order of business. He gave a very interesting talk on army life, using as his subject, "The Physician as a Soldier in Feld Service, and the Physician as a Medical Officer in the Base Hospital."

The Blair County Society has already a good representation Over There, with indications of more to follow soon.

C. W. Burket, Reporter.

DELAWARE—JUNE

The June meeting of the Delaware County Society was held at the County Home at Lima, June 20. Dr. John C. Hirst of Philadelphia read a very interesting paper on "Confessions of an Obstetrician," which was enjoyed by all present.

He spoke of the use and abuse of pituitrin, emphasizing that it should only be used where the cervix is fully dilated and the head has passed out of the cervix. In other words it should be used only in those cases where low forceps could be applied. A number of cases of ruptured uteri were reported due to the abuse of the drug. Syphilis is a contra-indication to its use.

Perineal repair was discussed and the disadvantages of primary repair. The condition of the tissues at this time renders a good result often unobtainable. For this reason the practice of allowing the patient to go for one week after delivering and then repairing cervix, perineum and anterior vaginal wall is gaining favor and results are much better.

A comparatively new treatment for hydrocephalus was described. This treatment is based on the fact that cerebrospinal fluid is very rapidly absorbed in the retroperitoneal space. Permanent drainage is therefore accomplished by means of a silver cannula which is placed obliquely through the body of the second or third lumbar vertebra. In the limited experience thus far the results have been very encouraging. If this treatment should be successful the treatment of hydrocephalic cases by craniotomy must be abandoned in favor of cesarean section.

After this interesting talk by Dr. Hirst, a very excellent dinner was served by the superintendent of the Home, Mr. Kerlin.

George B. Sickel, Reporter.

LEBANON—JUNE

The Lebanon County Society met at the Water Works, June 10. This was the first of a number of recreational outings planned for the summer season. Dr. F. B. Marshall presided.

Dr. John Beattie read a paper on "The Duty of American Physicians in the Present War." He said that if one were suddenly carried backward twenty or thirty centuries into the midst of that which was then called Gaul, one would not recognize France. . . . The land was not cultivated but instead the whole country was covered with vast and uncleaned forests and primitive vegetation and was overrun with wolves and bears, and great herds of swine as fierce almost as the wolves. If one were today to visit that part of France that has become the chief scene of this cruel tragedy one would see nothing but desolation and ruin brought about by the German beasts—the human counterpart of the wolves, bears and swine that roamed there in prehistoric times. As we send our men by the millions to serve their country and the world, so must go in proportionate numbers the doctors and nurses. Is there a greater patriotic duty that we doctors can render! Is there any more valorous way for us to maintain the traditions of our grand profession in this the greatest of tragedies since calvary! Every doctor in America should at least offer himself and stand ready to serve where needed.

After the meeting all adjourned to the spacious dining hall where full justice was done to the chicken and waffle dinner. The next meeting will be held at Myerstown and the ladies are invited.

George R. Pretz, Reporter.

NORTHAMPTON—MAY

The Northampton County Society met at St. Luke's Hospital, South Bethlehem. The meeting consisted of a clinic on ulcer of the stomach and duodenum. A large number of men from all sections of the county were present.

Dr. William L. Estes spoke on "The Embryology and Anatomy of the Alimentary Tract," showing the very close relation developmentally of the different portions of this tract and the consequent similarity of symptoms in disease of different organs making up the alimentary tract. The "Laboratory Findings Which Assist in Diagnosing Diseases of the Stomach and Intestine," was presented by Dr. C. E. Royce, pathologist of St. Luke's Hospital. The "Symptomatology of Ulcer of the Stomach and Duodenum," was presented by Dr. William P. Walker. "Treatment of These Lesions," was the subject of a paper read by Dr. Robert Boyd, the physician in charge of the medical department of St. Luke's. Cases illustrating this subject were exhibited.

NORTHAMPTON—JUNE

The Northampton County Society met at the Easton Public Library in open meeting, June 21.

Dr. S. McC. Hamill, Chief of Division of Child Hygiene of the Department of Health of Pennsylvania, spoke on "Children's Year and Pennsylvania's Part in It." There are several reasons why the conservation of lives in general is so necessary at this time. (1) There are millions of men being killed in the great war. (2) The birth rate in Europe has fallen off markedly on account of the absence of men from their homes while in military service. (3) The strained conditions of living in the warring countries tend to increase the mortality of babies. There is, therefore, a special effort being put forward to reduce the mortality rate among children. In Germany the plans for such work were already made, in the characteristic Teuton manner, before the war. The work is being carried on systematically in France and England, and now we are face to face with the necessity of this very important problem—Child Welfare Work.

The need for this movement is particularly great in Pennsylvania, whose death rate per 1,000 live births in 1915 was 110. In 1916, the rate was 113 per 1,000 live births. These figures were exceeded in certain more crowded cities, especially where the population suddenly increased, as in South Bethlehem, where in 1916 the death rate was 146 per 1,000 live births. In contrast with these figures, New York City had a death rate of 88 per 1,000 live births in 1916, and of 90 per 1,000 live births in 1915. New Zealand has established the finest record of any country in the world, where the death rate per 1,000 live births has been reduced from 80 to 50.

This goal of 50 deaths per 1,000 live births is to be ours, and the slogan, "Save 100,000 babies in 1918," represents what it is hoped will be accomplished throughout the country by a real effort on a carefully planned system. This plan is that physicians shall direct, that lay folk shall be organized in committees who will place workers in every section of our cities, towns and country, to instruct the public in methods which will save the lives of babies. The instruction includes: Cure and prevention of venereal diseases; protection of the pregnant woman; skilled obstetrics; proper nourishment; rest and general surroundings for the mother so that she may nurse the child; scientific care of the babe, as breast feeding, proper housing, bathing and skilled medical treatment promptly in any digestive disturbance, as well as the application of the other modern means of prevention and cure of disease. The work will be coordinated and there will be no overlapping.

Furthermore, it will be, in this state, an official branch of the State Department of Health. It is intended that the work of popular instruction will be extended to include children of the older groups, so that the degree of health possessed by our young men will be far superior to what it has been found during the examination of those called in the draft during our participation in the war.

W. D. Chase, Reporter.

PHILADELPHIA—APRIL

The Philadelphia County Society met April 10 at 8:30 p. m., with President Hammond in the chair. A symposium on "The Modern Treatment of Burns and Leg Ulcers" was presented.

"Treatment of Burns by Exposure to the Air and the Application of Dichloramin-T Through Paraffined Mosquito Netting," was given by Drs. Walter Estelle Lee and William F. Furness.

Dr. Lee: Stewart's definition of an ideal dressing for severe burns is one "that would be (1) aseptic or (2) mildly antiseptic; (3) that would provide free drainage; (4) that would not macerate or (5) stick to the tissues, and (6) would not necessitate frequent changing." Still another might be added, (7) that it should minimize the abnormal radiation of body heat from surfaces devoid of the protection of the skin and subcutaneous tissues. We do not have at the present time any one method of treatment of burns in which all these conditions are attained. The many forms of paraffin films now used do meet some of the necessary conditions. The recent interest in paraffin film treatment has for the time being induced many surgeons to abandon a method which for some time had given excellent results—the exposure of the burned surfaces to the air.

The open-air treatment of burns more nearly meets the theoretical requirements of an ideal dressing than any other that has been proposed. The following modifications of the open-air treatment of burns is suggested. The covering of the entire burned area and a generous portion of the surrounding skin with a single layer of mosquito netting which has been previously impregnated with paraffin wax. The paraffin netting may be held in place by single layers of a circular turn of gauze bandage or by adhesive strips applied over the netting and the uninjured skin (never over the burned area). Such a dressing is aseptic, and the large open meshes provide perfect drainage for the wound secretions to the outer surface of the netting. When this scab formation on the outer surface of the netting interferes in the slightest way with the drainage of the wound secretions, it is completely and painlessly removed by lifting the nonsticking paraffin net from the surface of the wound, usually once in twenty-four hours. The paraffined netting rarely adheres to the wound surface, and then a generous spraying with sterile paraffin oil will always loosen it. The only remaining condition to be met in order to have the air treatment fulfil all the requirements of the ideal dressing is the use of an antiseptic. We know that a 1 or 2 per cent. solution of dichloramin-T dissolved in chlorinated paraffin wax (after the method of preparation proposed by Dakin and Dunham) can be used on burned surfaces without causing any objectionable subjective or objective irritative phenomena. This oil solution can be readily applied in the form of a spray (at the room temperature no heating is required as with the paraffin films) and to the entire burned surface, before the paraffined net dressing is applied, and consequently, through the meshes of the net on to the surface of the wound if, for any of the above-mentioned reasons, it is unnecessary to remove the dressing each day. We have employed this modified air treatment of burns on eighty-six cases at the Pennsylvania and Germantown hospitals during the last seventeen months. With it we feel that because of the surprisingly small degree of infection occurring in these wounds they have healed more promptly and with more satisfactory scars than with any other method heretofore used. (The paper outlined the preparation of the paraffined mosquito netting used to minimize the sticking of the dressings to, and permit the drainage of the discharges from, the surfaces of the wounds and extensive burns.)

"Treatment of Burns" was given by Dr. Robert Perry Cummins. In the steel industry one sees almost every type of burn. Among the most common are those caused by molten metal splashes coming in contact with the tissues, those setting fire to clothing, and those due to back drafts from furnaces. In treatment, all burns must be regarded as infected wounds; shock must be considered and the question of the primary dressing; also treatment after subsidence of the acute inflammatory stage, the constitutional treatment and the treatment of sequelae. For the immediate treatment of shock I rely more on the use of adrenalin and ergot than on strychnin and digitalis. I would caution against overstimulation. For the cleansing of wounds benzin is our best agent. This should be of high grade. The dressing should be warm sterile boric or normal salt solution, changed once or twice every twenty-four hours, continued for three or four days. In the healing period the paraffin treatment or the open-air method has given us the best results. If the paraffin method is employed I advise that its use be suspended for a few days that the wound may be freed of pus by the application of an antiseptic, such as dichloramin-T. I am decidedly opposed to the exclusive use of the paraffin method in burns of large area; also I never use paraffin over a sloughing area. Exuberant granulations should not be cauterized; these are soon strangled by the elements of regeneration of the skin. A very striking characteristic of the scar of paraffin is the absence of hard, poorly nourished scar tissue. It almost invariably resembles normal skin. The open-air treatment is more satisfactory in application if the patient is a hospital case. When scars and contractures are likely to lead to deformities, splints, postures and passive motion form as important a procedure as technic and dressing. Important factors in the treatment of the complicating toxic nephritis are an abundance of concentrated liquid food and water, stimulation, elimination by every possible avenue. The prognosis presents a difficult problem; one is uncertain of the outcome until the patient is well advanced toward recovery; alcoholics have little chance of recovery in extensive burns. In treatment careful surgery and technic are of equal importance with the dressings.

"The Use of Iodin Fumes in the Treatment of Ulcers," was given by Dr. John J. Gilbride. About a year and a half ago, having read in *The Journal of the American Medical Association* of the satisfactory results in treatment of ulcers with iodin fumes, I employed this method in a severe burn of the leg from a hot-water bottle in a patient who had had an appendectomy. The burn had resisted the ordinary treatment given for a month or two. At the time of the first application of the iodin fumes the ulcer was about three quarters its original size. One subsequent treatment was given and in a week following the ulcer had completely healed. I have since used the fumes in four other cases of burn with most satisfactory results.

"The Treatment of Leg Ulcers," was given by Dr. Penn Gaskill Skillern, Jr. The principles of the treatment of ulcer include sterilization of the ulcer and support of the part. Since congestion is the first stage of inflammation the patient should be put to bed and the limb elevated to an angle of 20 degrees. Sterilization of the wound should then be effected, and this is best accomplished by the use of dichloramin-T. Following the application of a 20 per cent. solution of dichloramin-T the paraffined wide-mesh mosquito netting described by Dr. Lee is placed over the area and secured at the edges with adhesive plaster. The next dressing is made in from twenty-four to forty-eight hours, and consists of a 5 per cent. solution of dichloramin-T. If the ulcer is large, skin grafting may be needed, the best method of which was carried out by Steele in 1870, and which utilizes a greater thickness of skin giving a graft from the size of a pea to a finger nail. These grafts take hold and make a more pliable scar. The treatment after the skin grafting is the same almost as before, that of the open method. A basket of wire gauze is placed over the open wound and the graft allowed to heal underneath. The best treatment for a small ulcer, practically sterile with heavy granulations in which the patient is able to be up and about, is that proposed back as far as 1776 by an English surgeon and revived recently, consisting of the application of imbricated adhesive plaster strips two thirds around the limb from below upward in the direction of the venous current. These strips support the edge of the ulcer, compress it and keep the blood out of the edge, thus preventing the granulations becoming edematous. Discharge is reduced to a minimum by means of the compression and calomel powder dusted on keeps the wound dry. If there happen to be a concavity between the floor of the ulcer and the surface of the leg the compression by the adhesive plaster strips is transferred to the base. In certain cases of simple ulcer in which this method is not effective, others must be used, the simplest of which is the Nussbaum operation. In addition to local treatment, there must sometimes be exposure of the nerves supplying the ulcer area. In the treatment of leg ulcer it is essential to remember the underlying congestion and the other fundamental etiologic factors involved.

Dr. Edward J. Klopp, in discussion: I have had opportunity to see Dr. Lee's method for the treatment of burns and believe it to be the best we have. Our experience with the paraffin treatment has been limited, but has been diappointing. For the removal of the carbonized tissue in the third degree burn, I believe that the dichloramin-T is probably not necessary. Our method formerly has been the use of salt solution. Most of the textbooks tell us that one of the best methods is that of immersing the patient in a tub of warm salt solution at a temperature of 100-105 F. Unfortunately, in the majority of instances the water is not maintained at this temperature, and the already shocked patient is further depressed. To facilitate the removal of carbonized tissue when we do not anesthetize and remove the tissue with the forceps, we cover the surface with narrow strips of sterilized gauze separated for about one-fourth inch. The surface is then covered with gauze saturated with warm sterile salt solution. The dressing can be changed and warm salt solution added without interfering with the wound. We have nothing to offer that will take the place of the dichloramin-T at present. Concerning the end results, Dr. Lee tells us that the scar is less than by previous methods. Sometimes it is several years before we see the maximum contraction of a scar. We are still of the opinion that in the presence of a large burned area with healthy surface skin grafting should probably be attempted because it expedites matters. Here, of course, our method of choice is the Thiersch procedure.

Dr. William L. Clark: The ulcers which I see are usually advanced cases in which ordinary methods have failed, when they are sent with the idea that electricity may be helpful. We have had much success. We have also had dismal failures. The diagnosis of the ulcer is of first importance. Syphilitic ulcer has been referred for epithelioma; epithelioma, for simple sluggish ulcer. For the different types different treatment is required. We have found that various physical measures often do good. The principle on which we use electricity is (1) destruction of the granulations; (2) sterilization; (3) relief of passive congestion.

Dr. Kate W. Baldwin: I have found that nothing is more soothing in burns and gives more rapid healing than the application of the violet ray of moderate strength. The value of the treatment was beautifully demonstrated in a child brought to the hospital in whom one third of the surface of the body had been burned. The child had been treated outside until it was in a septic condition. The child was placed on the table, and without an anesthetic the moderate current was applied. I was careful to put the electrode in contact before turning on the current. The child went to sleep and remained asleep while I made the application over the entire surface involved.

Dr. Moses Behrend: The treatment of burns with paraffin has given us good results. The scarring is as soft following the use of paraffin as from dichloramin-T. I believe, however, that the dichloramin-T is the better method because of its antiseptic quality and because of the fact that the paraffin retains the discharges for quite a long time.

The Philadelphia County Society met April 24 at 8:30 p. m., President Hammond in the Chair. A symposium on The Anemias was presented.

Dr. Fred J. Kalteyer presented a paper on "The Diagnostic and Prognostic Value of Blood Studies in the Anemias."

Dr. Alfred Stengel read a paper on "The Recognition and Treatment of the Anemias." When we sum up all cases of anemia there will be relatively few of the so-called primary anemias and a very great many of the form termed secondary anemia. The secondary anemias or the simple anemias, analyzed from the standpoint of cause, may be grouped under: (1) Infections; (2) those following hemorrhage, manifest or concealed; (3) those due to some form of intoxication. While lead is the recognized form of poisoning, in these days we must remember that new poisons are being encountered, and that cases, such as we have termed pernicious anemia, may be due to T. N. T. poisoning. (4) We have the parasitic anemias; (5) Anemias that are expressive of some deep seated, perhaps, overlooked neoplasm.

Infection is probably the cause of the very great majority of anemias that we see in ordinary everyday practice and these cases are mainly important where the infection is not manifest. We see young boys and girls who are anemic. We treat them with iron and arsenic; they improve, but relapse. We come to the belief that they have a constitutional tendency to anemia; as a matter of fact we have failed to recognize the cause of the anemia in these cases. We can recall cases of anemia in young women and boys with valvular lesions of the heart. They have a chronic infection and they literally eat iron and are thus kept in a reasonably good condition of health. We see such young people with large cystic infected tonsils constantly relapsing because the infection is allowed to remain. Our attitude as practitioners has been all wrong in this connection. In the post-hemorrhagic anemias there are the open and the concealed hemorrhages and in the latter instance mistake in diagnosis is not unlikely. The longer an anemia lasts the more it approaches in its clinical appearance a pernicious and an aplastic anemia. The bone marrow gets tired out and the patient's appearance is that of a pernicious anemia case. In such a case although the cause of the anemia may be removed the patient does not get well; the anemia habit is established; the blood regenerating function is absent, and while the blood does not show the characteristics of pernicious anemia the patient is anemic until he dies. In the question of treatment I am not so much concerned with the form of iron and arsenic that is used as in finding and removing the cause; sugically if focal. Transfusion is indicated in acute anemia due to loss of blood. Splenectomy in my judgment is one of the most valuable adjuncts in the treatment of certain types of anemia that has been discovered. It is, however, a very serious procedure, and the case must be selected.

"The Value of Splenectomy in the Treatment of Some of the Anemias," was given by Dr. John B. Deaver. The leading indication for splenectomy is probably traumatic injury. Inspection will soon indicate whether or not the organ should be removed. Injury to the hilus without doubt demands removal, a slight wound of the cortex might be treated conservatively by some surgeons, but if there is any doubt, removal is the safer course. Neoplasms of the spleen are rare, but they demand splenectomy, unless there is evidence of metastasis. Wandering spleen is often associated with splenic enlargement. It may be treated by splenopexy or splenectomy according to the case. A more common condition of enlargement is that due to Banti's disease. While we do not definitely know its etiology, we do know that removing the spleen has obtained a cure in a great many instances. While some recoveries have been reported from operation in the later stages of the disease, and personally I have had the experience, operation is attended with great risk; early operation has been attended with such good results that it should be resorted to without hesitance.

The mortality appears to be about 11 per cent. We are told that the best results of splenectomy are obtained in the treatment of hemolytic jaundice. Eliot and Kavanel in 48 cases collected in 1915 report only 2 deaths, a mortality of 4.2 per cent. Krumbhaar in 1916 had collected 156 cases of pernicious anemia treated by splenectomy with 30 deaths. The Mayo Clinic reports 31 splenectomies for pernicious anemia up to April 1, 1916, with 3 deaths. or 9.7 per cent. mortality. Of the survivors, 22 or 78 per cent. showed continuous improvement; of 16 followed up for six months, 11 continued to improve and 3 had had relapses. From the experience of the Mayo Clinic it appears that splenectomy for the relief of pernicious anemia should be considered in youthful and middle-aged subjects showing good general resistance and where splenic enlargement is moderate and there is evidence of hemolytic action. The degree of hemolytic activity is estimated by the blood pigments, urobilin and urobilinogen in the duodenal contents. A comparison of the degree of hemolysis with the severity of the anemia seems to indicate the degree of productive power of the bone marrow. Hemoglobin below 35 per cent. of erythrocytes less than 1,500,000 increases the operative risk. An improvement in the blood picture and in the general condition may be obtained by preoperative blood transfusion. In a few instances blood transfusion for postoperative relapse has been successfully employed in the Mayo Clinic, but not adopted routinely. The treatment of pernicious anemia by splenectomy is still on trial and is apparently merely palliative. There is, however, reasonable hope for improved results. In the aplastic type of the disease splenectomy is contraindicated. Splenectomy is also contraindicated in leukemia. My experience concerns a few cases of Banti's disease and of pernicious anemia. I know of at least one case of Banti's disease in which the patient had been operated on and lived comfortably for several years, dying later of hematemesis. I have operated on late Banti's cases in the presence of ascites with good result. The few cases of pernicious anemia which I have operated on have shown the same fluctuations of improvement and relapse which seem to characterize the condition.

Dr. James A. Kelly read a paper on "The Value of Blood Transfusion in the Treatment of the Anemias."

Dr. Harry Lowenburg, in discussion: I would call attention to a method of blood transfusion in infants not touched upon. Within the last month I have on three occasions effectually done a transfusion in the longitudinal sinus through the inferior fontanelle. The technic is simple and the result brilliant. In one referred case the child was 16 months of age with a hemoglobin of 30 per cent. and 1,560,000 white cells. I studied the case along the lines suggested by Dr. Stengel knowing that every anemia has a cause. The baby had had bloody stools for about a year. I was unable to determine whether this condition was responsible for the anemia or was caused by it. As a last resort I tried transfusion. The hemoglobin has been raised to 65 per cent. and the leukocyte count to 4,800,000. The child has had no bloody stools since the first transfusion. I call attention to the procedure as a valuable but much neglected means of intravenous medication.

At the Patriotic Rally, under the auspices of the Philadelphia County Medical Society, Bellevue-Stratford, Philadelphia, April 26, Dr. John B. Deaver gave an address, of which the following is an abstract:

Never in the history of the country has the word *liberty* been fraught with intenser meaning than at this hour. In this historical city, the birthplace of the great republic and of our beloved flag—beautiful as a flower to those who love it, terrible as a meteor to those who hate it, the symbol of the honor and glory of one hundred millions of Americans, we are renewing the pledge made by our sires when they determined that the iron tongue of the great bell in their town hall shall indeed proclaim liberty through the land and to all the inhabitants thereof. We have dedicated ourselves to spreading that prophetic message to all the oppressed peoples of the world; that freedom and justice and right shall everywhere henceforth sit in the seats of the mighty, who shall derive their might, not by an imaginary divine inheritance nor by the rattling of the sword, but as the voluntarily chosen rulers of free peoples, both great and small. When the torch in the hands of the Goddess guarding the entry to one of the finest harbors in the world stands in danger of being extinguished perhaps forever; when tyranny in its most refined and cruel aspects threatens to crush all that makes life worth living; when the ruthless hand of a ruthless foe wantonly desecrates and destroys that which is sacred to thousands upon thousands of human beings; when the conventions that have bound the nations together from the dawn of civilization and all considerations of humanity are thrown to the winds, then, I say, we cannot too insistently and too often remind ourselves that we are determined that these things shall be made forever impossible.

Those who at the outbreak of the great cataclysm of 1914 advocated preparedness for this nation are today having the satisfaction of having had the proper vision. Does not the Bible teach us "Where there is no vision, the people perish?" It was hardly to be expected that we could continue in our splendid and complacent isolation from the perplexing problem of the balance of power that was keeping Europe on the edge of the precipice all the time. Considering that our entry into the war was so inevitable, is it not a pity that it did not occur sooner? "That the world may be made safe for democracy" has resounded throughout the world. What Prussia is doing in Russia sufficiently well shows that the true meaning of the words justice and right has not yet penetrated the Prussian skull. The eyes of the world are looking to us for deliverance; the hungry nations are counting on us to feed them; the worn-out but indomitable troops of our allies are counting on us for reenforcements. Undaunted and unafraid, we must stand forth in an unbroken and unbreakable phalanx, ready to give up all for the cause that is ours.

This meeting has been called in response to the request of the president that we this day renew our pledge to keep the torch of Liberty aflame that it may illumine the world. While the doctors have the privilege of serving their country in a double capacity, theirs is also a double responsibility. The government is asking for more volunteers in the Medical Reserve Corps. Seven thousand more are needed. Of these, Pennsylvania is to provide 400. We must act promptly and generously. Our money above all is needed to show those who are in the midst of the fray that we over here realize the seriousness of the cause, that we are standing up for "the wrongs that need resistance, for the future in the distance, for the good that we can do." It is also a significant thing that there are among us tonight representatives of that second line of defense—our American women. We are indeed proud of them. Witness the great part they are playing in marshalling the mighty power of the nation. Look at them in positions we used to think they could not fill, then watch this Philadelphia mother with four sons already in the service, as she goes to the recruiting office with tearful eye, but willing heart, to give her last, a lad of 19, to her country and *his*. Truly, we can say, our eyes are singled to one purpose. The call for the third Liberty Loan is meeting with splendid response, but we cannot rest satisfied with this. Our boys at the front go to the supreme sacrifice singing songs. We, too, should sing songs of praise that it is given to us who remain at home to be able to provide the sinews of war for those who are fighting the battle for us. We must win or die—and we will not die. It is not merely a question of doing all we can—it is a question of doing *all there is to be done*.

"Some of My Observations in France," was presented by Major W. A. Garrett, assistant general manager, Remington Arms Company. Our commission sent to France by the War Department, to study the French railroads and report on their needs to take care of the American expeditionary force to be sent over under General Pershing, consisted of William Barclay Parsons of New York, the engineer who built the subway, chairman, to give special attention to rivers and harbors; William J. Wilgus, formerly vice president of the New York Central, to study maintenance of ways and bridges; Mr. F. de St. Phalle of the Baldwin Locomotive Works was to study locomotives and cars, and my study was transportation. We were able to report in part to the department that the railroads of France were in as good average condition as the average American railroads today. We had the word of French officers that the moment the railroads go down, that moment a country loses a war. The British have a problem similar to our own; that is, to handle men and material from the west coast of France to the fighting line. In England in the effort to economize in every possible way, little notice cards are put on your table, "Don't waste bread; if half a slice is enough, please cut the whole slice. Every one must save bread; it is a national duty. Will you help?" The difference between England and the United States is this: The situation is serious and England knows that to be true; the United States does not yet know that to be true." We will all know it soon.

We reached Folkstone forty-eight hours after a German aeroplane had killed thirty-eight people, principally women and children. France has seen her own people killed, male and female enslaved, females worse than enslaved, their houses looted and destroyed, their streams and wells polluted, and the very ground from which they must get their living shot up to almost utter uselessness. War is just what Sherman said it was—Plus. The French people are not so much impressed with what the German army has done as what it did not do, because on paper the Germans had the best gambling chance to win that any country could have after forty years of preparation. We were told in France that the Germans were so sure of getting into Paris that when the battle of the Marne was fought they had left their big guns back in Belgium. Joffre's handling of the railroads was such that the Germans could not have gotten down the larger guns if they had tried. The Pressed Steel Car Company here in America has orders to build a certain number of steel freight cars for the French government. They are built in this country, knocked down and sent overseas and erected in France by the German prisoners. They were paying the German prisoners 4 francs for each day's work, with a possible 1 franc extra as a bonus, provided they did more than their day's work. We were told that 90 per cent. of the German prisoners were making the 1 franc extra.

On the British fighting line we saw that wonderful aggregation of British fighters from England, Ireland, Scotland, Wales, Canada, Australia, West Indies, New Zealand. One sees hundreds of miles of shot-up trenches and thousands of miles of barbed wire fences and entanglements, and the wonderful hospitals in charge of those splendid men and true, godly women. And then one sees the graveyards, hundreds upon hundreds and thousands upon thousands of graves everywhere; white crosses for the allies, black crosses marking the Germans. From German prisoners were taken postcards reading "You will take no prisoners. Show no mercy. Show no quarter. Make yourself as terrible as the Hun who said 'Where our footsteps fall let no grass grow for a thousand years.'" The German soldiers are trying hard to carry out the order, and are doing the job well. This is what General Pershing has put out: "Your first duty is to be soldiers; your second, and scarcely less important, to help those who are poor and weak. You will be courteous to all women. Abstain from wine and liquor. Be kind to little children. You will fear God and honor your country and win the war to liberty. God bless you and keep you."

Our commission did not witness any German atrocities; that was not our study. But there are commissions in both Belgium and France who are taking the historical record, so that when the time comes for the long-table conference, with Germany on one side and the allies on the other, there will be an accounting from which there can be absolutely no escape for the Germans. The British are protecting in the northeastern part of France approximately 125 miles of fighting front from Belgium into France, and the average distance between the British channel and the British fighting line is approximately 50 miles. Where we, the American troops fight, it is over 400 miles from the coast to the fighting line. The British have 750 British locomotives in France; 49,500 British freight cars in France; 98,620-odd transportation men for a 50-mile haul, and *we* have a 400-mile haul. The British also have on this 50-mile fighting front over 200,000 laborers of twelve nationalities to unload ships, work on the railroads, highways, canals, supply stations and railway yards. In other words, 200,000 laborers and 100,000 transportation men for a 50-mile performance, and *we* have a 400-mile performance. The American people have absolutely no thought of what they are up against. When the second Liberty Loan came out less than 10 per cent. of our people thought sufficient of the war to loan the government money. We will know, however that we are at war when we see cripples, cripples everywhere, when our hospitals are full to overflowing, and when your boys do not come home.

General Petain told us about Verdun. He was at Verdun when the crown prince made the attack, one of the greatest attacks the world has ever known, because Emperor William wanted to have the crown prince do something worth while. General Petain decided to hold Verdun, and he issued the famous order, "They shall not pass—Petain," which is still painted on the fort at Verdun. General Petain told us that as soon as it was decided to hold Verdun they decided to do three things: Build a 36-mile double-track railway from Fleury to Douney, and it took 60,000 men three months to build it. They then decided to make a narrow line of 3-feet gauge which they had into a double track. The call for engines and cars for this work was so urgent that passengers and freight were left standing out in the country. The third thing which they did was to make a pike into a double width that automobiles might pass. Automobiles going to Verdun with men and materials had the right of way. We looked across the valley where the crown prince of Germany lost over 500,000 men trying to take Verdun. In each German regiment they have what they call a "hellish squad," the duty of which is to poison wells and to connect with electric batteries everything movable. Every soldier in Europe today rides in box cars and on flat cars, and if there is any complaint about our passenger car service in this country, keep that fact in mind. The food situation in certain parts of France is very critical. Few people in this country understand what that splendid man Hoover is trying to work out. He is not trying to save you the cost of living, but to prevent starvation in Europe and here. The French people are very tired. They have fought the war for over three years. They have lost 1,300,000 men killed, and you cannot tell how many men crippled—crippled—crippled! All that France can give our people today is air, water and standing timber. Claveille said: "Don't send any bridge timber, dock timber or railroad ties. Send your foresters over to cut our standing timber." When we left Paris coal was selling for $45 per ton, and you could not get the full half ton that Dr. Garfield gave you last year.

It had never been my good fortune to meet General Pershing until I was in France. He endeared himself to the French people because he went to the tomb of Lafayette and said, "Lafayette, we are here!" Four words, and then the French people knew that the American commander was a man of action and not of words. Until we reached Peronne, today in the hands of the British, I was of the opinion that the destruction of trees was a military necessity. There we saw on each side of the boulevard trees 50 or 60 years of age. The Germans had deliberately cut each tree three quarters through with an axe; every tree standing and every tree dead. Over 46,000 women are working on the French railroads. In England the "British Women's Army Auxiliary Corps" are getting approximately 50,000 women to be sent to France to act as clerks, cooks and chauffeurs. The American women—God bless them!—they will do the right thing when they know the job before them, and the job is there. My father was a birthright Quaker, but, having seen France, I am absolutely certain that we should have in this country universal military training.

Will we win the war? Yes! Just as sure as the sun rises in the east *because we must*. How long will the war last? Until we win. Our government, however, has very wisely mapped out a program for a long-time war. But consider the bigness of the war. Money by the billions, men by the millions, ships, aeroplanes and cars by the thousands. Our war program is the biggest transportation program that the world has ever known. My message to those who stay at home is: Economize. Don't waste. Be an American first, last and all the time. Let your criticism of our war program be *con*structive and not destructive; stand behind the government and ask yourself each day, "What am I doing to help win this war?" And for those good men and true women who go abroad to win our war, Good luck and God bless them!

THE PENNSYLVANIA MEDICAL JOURNAL

Official Organ of the Medical Society of the State of Pennsylvania

Volume XXI
Number 11

Athens, Pa., August, 1918

Subscription:
$2.00 Per Year

SIXTH CONFERENCE OF INDUSTRIAL PHYSICIANS AND SURGEONS

HELD UNDER THE DIRECTION OF THE DEPARTMENT OF LABOR AND INDUSTRY OF THE COMMONWEALTH OF PENNSYLVANIA

HALL OF THE HOUSE OF REPRESENTATIVES, STATE CAPITOL, HARRISBURG, APRIL 9, 1918

MORNING SESSION

The meeting was called to order at 9:40 a. m. by the chairman, Dr. Francis D. Patterson, Chief Division of Industrial Hygiene and Engineering, Pennsylvania Department of Labor and Industry, Harrisburg.

Dr. Patterson: The meeting will kindly come to order. This, as you know, is the Sixth Conference of Industrial Physicians and Surgeons of Pennsylvania, and, to our mind, it comes at a peculiarly appropriate time. We are just past the first year of war "against an enemy who has neither respect for human liberty nor reverence for God; who makes war on defenseless mothers, and butchers little children for a German holiday; who strikes down the aged and the infirm, the maimed and the sick; who makes a shambles of the house of God, and who kills in the name of victory; who dispenses Iron Crosses for murder on the field of battle."

Against such an enemy as this there are only two alternatives: either we must win the war or we must lay down our arms in inglorious defeat. Your Commonwealth of Pennsylvania has been appropriately described as being the workshop and arsenal of the nation. We have over four million workers, many of whom are engaged in industries essential to the prosecution of the war. From 30 to 60 per cent. of the vital munitions of war come from within our state, from approximately thirty thousand industrial establishments. We have marvelous natural resources of oil, coal, timber and water power. Our shipbuilding centers on the Delaware have not inaptly been described as the Clyde of America. Therefore, it is extremely appropriate that the industrial physicians and surgeons of our own and neighboring commonwealths should get together and take counsel as to how those engaged in making these necessities shall, when they meet with accidents, receive prompt treatment; so that disability on their part may be prevented, if possible, or they may recover from their disability at the earliest moment.

The March issue of the Pennsylvania Medical Journal, containing the proceedings of our Fifth Conference, has been sent to each member of our association. Those who have not registered may obtain the same on application in the registration room or to myself.

It is a matter of infinite regret, and has come to me as a personal loss, that the Lord, in His wisdom, has seen fit to remove from our midst, since last we met, a man with whom I had had a friendship that had lasted for twenty years, a man who was the friend of us all. I refer to Dr. John W. Luther, the highly competent and efficient surgeon, the ever courteous gentleman, who had charge of the work at the New Jersey Zinc Company at Palmerton. Appropriate resolutions to be sent to Dr. Luther's family have been drafted by the committee. We all feel keenly his loss; for he was a man who had had a very wide experience, and was endowed not only with broad, profound knowledge in the work which interests us all, but with the ability to impart that knowledge to others.

Now it is my pleasure to introduce Mr. L. R. Palmer, Acting Commissioner of the Department of Labor and Industry, who will say a few words to us of welcome to this Sixth Conference.

ADDRESS OF WELCOME

MR. LEW R. PALMER
Acting Commissioner, Pennsylvania Department of Labor and Industry
HARRISBURG

It is always a pleasure to greet our old friends, and we hope today we are also meeting new ones. At the last Conference that was held here, you organized as a Branch of the American Association of Industrial Physicians and Surgeons; and I believe that you, as well as those of our department, are commencing to feel that you are becoming a part of our department. At the last conference, we, as a department, called on you to assist us in developing a plan for the reconstruction of the crippled soldiers of Pennsylvania coming back from the firing line in France. In connection with that work, I feel sure that all of us who have studied it will be interested in a letter recently sent out that I should like to bring to your attention. It is addressed to Hon. Frank D. Beary, Adjutant-General, and is as follows:

Commonwealth of Pennsylvania
Executive Chamber, Harrisburg
March 19, 1918.

Hon. Frank D. Beary, *Adjutant General;* Hon. B. F. Royer, *Acting Commissioner of Health;* Hon. Lew R. Palmer, *Acting Commissioner of Labor and Industry;* Dr. J. George Becht, *Secretary, State Board of Education, Harrisburg, Pa.*

Gentlemen:—We are face to face with the imminence of caring for the injured soldiers of this Republic on their return to this Commonwealth, and it has been represented to me by Mr. Palmer, Acting Commissioner of Labor and Industry, that it will be possible to place thousands of these injured soldiers in productive employment in Pennsylvania provided we sanely and wisely plan to care for them as they return.

To that end I am asking you four gentlemen to constitute a committee, of which Adjutant General Beary shall be Chairman, to meet at a place to be designated by him on Thursday of this week at an hour suited to your mutual convenience and to be indicated by the Adjutant General, for the purpose of organizing to take under consideration:

1. Medical restoration of these men to their highest physical capacity under injury.
2. Their educational training for their best possible occupational relation to industry.
3. Their placement through the employment agencies of the Commonwealth in those industries where they would do the largest good and receive the best rewards.

It may be of interest to you to know that Mr. S. S. Riddle, of the Department of Labor and Industry, has already made state-wide inquiry concerning this, is conversant with many aspects of the situation and has been in touch with the Federal Government. I respectfully suggest that you ask him to be present at the meeting and act as secretary.

Trusting that you will all accept this service with alacrity and perform this duty, associating with you such counselors as you may deem wise, I am,

Very truly yours,
M. G. Brumbaugh,
Governor of Pennsylvania.

An immediate meeting of this committee followed, the members of the committee putting the motion to place the resources of Pennsylvania at the disposal of the Government, which is developing a nation-wide plan. You may have already read in our department publications the results from a questionnaire sent out. We have the promise of 30,710 jobs for these soldiers when they return. The positions are card-indexed, and are awaiting the men when the time comes. This is a very important subject, we feel, and we call on this organization to assist in handling this stupendous work that we have before us.

The last meeting was held just as Major Jackson was sailing for the front. He is now doing a work there similar to that which he had to do in Pennsylvania. He is in charge of a labor bureau of the allied forces at the front. We have just received from him a letter in which he calls on us to continue our efforts in carrying on the work in Pennsylvania. An extract from this letter is as follows

"I hope for the sake of the Democracy of the World and *our boys at the front,* that the employees and the employers of Pennsylvania, with your energetic aid, are taking such a broad-minded and patriotic stand that cessation of work through strikes is a thing of the past. I appreciate fully that this requires as much, or may be even more, sacrifice from employers than from employees. The employer who does not deal generously with the employees in these times of high cost of living, and then berates his employees because they strike and calls them unpatriotic, is a very bad citizen, while the employees who demand, merely because they have the power, more than is just, are equally to be condemned."

The letters that have come to us from the commissioner have shown us that over there they need the cooperation of every workman and every individual in Pennsylvania, as well as in the other states; and we feel that our department is the war department of the war state of what is going to be the war nation. We have tried, as a department, to eliminate all the nonessentials, and to prepare our program so as to get the greatest results possible at this time of national need. Our Bureau of Mediation and Arbitration has, I am glad to say, done some splendid work in the past. We hope that we may continue our good record in the future. At Washington, last week, it was a pleasure to hear from the Federal Department that Pennsylvania had handled her labor troubles as well as had any other state in the land, if not better; and well may she do so, as upon her rests the greater part of the burden connected with this war.

Another problem before us is constituted by the labor of women and children in industry; and in order to handle this better we have divided our department, and placed in charge of the Women's and Children's Division of the Department of Labor and Industry Dr. Elizabeth B. Bricker. You, no doubt, will be called on to assist us in furthering the program that we have in hand. The first real address that we shall have this morning (mine is not a real one) is on this topic, and is to be presented by Mrs. Samuel Semple, the woman member of our Industrial Board, and the woman member of the Advisory Committee to this division, which I have mentioned.

Our employment problem in Pennsylvania has been handled in cooperation with the

Federal Department of Labor, and we hope to cooperate with them further in our work.

You will hear a great deal as to the details of handling compensation; but I believe that the best kind of compensation is prevention. We are, therefore, trying to develop preventive measures against accidents, considering this better than compensating the victims after the accidents have happened. You will hear the details concerning compensation this afternoon. We have associated our compensation organization with our accident prevention organization, and I think we are fairly wise in doing this; because if there is any one thing that has brought this department to the success that it has attained thus far, it is that it has endeavored to adopt improved industrial measures—and our compensation plan is one of these measures.

We have an Accident Prevention and Investigation Division, and the head of this Accident Prevention and Investigation Division is now in Pittsburgh. Naturally, the last-named industrial center is the storm center of accidents; and we are specializing in this center, and are hoping to show within a year a material reduction in loss of life and injury in that city.

It has been recently said that from 40 to 60 per cent. of the vital munitions going to sustain our armies at the front must come from Pennsylvania industries. This, indeed, is a responsibility. We have a large organization in this department. We have associated with it all agencies working along our particular lines. We may have our plans, we may have our laws, we may have our unlimited resources, we may have our mighty armies afield and afloat; but unless we have the purpose and spirit to win, the war is lost. Thank God, however, the spirit of '76 still lives in Pennsylvania! Nine million of her liberty-loving people stand behind our nation's flag, and three million of these are war workers. Never before has the man power of our old state been of such moment in sustaining the life of our nation; for on the products of her mines and mills depends the life or death of that liberty for which our forefathers so freely shed their blood at Valley Forge and Gettysburg.

The meeting is now open, and I hope and believe that we shall obtain from this conference the beneficial results that we have obtained from the meetings that have gone before. I also trust that in meeting with us, you may be benefited likewise. Again I say that it is a pleasure to meet the old friends and to greet the new. I thank you.

Dr. Patterson: I am sure that we are much indebted to Commissioner Palmer for his words of welcome. We will now proceed with our program.

The onset of war has brought a vast change in our industrial structure; and with the call of thousands of men to the colors and the additional fact that thousands have gone to work in various industries, women have begun to occupy a place in our industrial structure that was formerly occupied exclusively by those of the opposite sex. This is true in all the states, but particularly so in Pennsylvania; and it will be our pleasure and privilege this morning to have Mrs. Samuel Semple of the Industrial Board tell us about the "Health Hazards to Women as the Result of the War Emergency."

THE HEALTH HAZARDS TO WOMEN AS THE RESULT OF THE WAR EMERGENCY

MRS. SAMUEL SEMPLE
Member of the Industrial Board, Pennsylvania Department of Labor and Industry
HARRISBURG

I have neither a paper nor an address to present. I have merely something in the nature of a plea to the men in Pennsylvania who have more influence to guide aright the efforts of women, as women are going into the industries of Pennsylvania in our war emergency, than any other group of men that I can think of. It seems to me that it is the duty of this department to appeal to the physicians of Pennsylvania, and especially the industrial physicians, for study and guidance at this time, when women are going into occupations that they have not previously entered to any great extent.

We used to be told that war had nothing to do with women, and that women had nothing to do with war; and during the past few years, as I have watched the effort of women to secure a recognized place in the larger life of the country in which they had put their whole stake, I have been struck by the fact that the refusal of those rights was largely grounded on the assumption that women had nothing to do with war. We have now been looking into the ugly face of war for nearly four years. For a while we looked at it from afar; but later, it became our intimate companion. It was not more than a few weeks after the declaration of war by the United States when going into a railway station I was confronted by a banner bearing the inscription, "If the war is to be won, it must be won in the kitchen." In connection with the conservation of food, the responsibility of our women has every few weeks been put prominently before us. If the war is to be won the human life of the country must be sustained, and the women must do it. The educational forces must be maintained at their highest point, and the women must do it. We must not lower our religious standards, and if they are to be kept at their highest, the women must do it. During the last week, we have gone through the great Liberty Loan campaign, and I have received again and again, through the mail, the statement that, if the Loan is to be put "over the top," the women must play their part.

There has been one other assumption constantly made — that if the war is to be won, it must be won in the workshops of America; and we are told the women must do it there as men are drawn into the draft. We are feeling more and more the cessation of immigration, which provided occupants for the workshops. Therefore women must take an increased share in the industries of the country.

I have been proud of the women of America, and particularly those of Pennsylvania; because, to every appeal they have given a ready, quick, enthusiastic response. The industries of Pennsylvania, the workshop of America, have more women in them today than we would have thought possible a year ago. As time passes, more and more women will be in these workshops, and we must study carefully the effect of this upon social life, upon the life and health of the women workers, and upon the health of the race for the future.

I speak of this last point, not, perhaps, with apology, but with just a little bit of qualification; because, as a woman, when I have listened to addresses on that subject, I have been often struck by the fact that women are largely considered in connection with child-bearing, as a means to an end. I think we have no right to consider the comfort and welfare of women in the industries of this state wholly and only from the point of view of the effect on the race. I think that woman has a right to consideration on her own individual account, at the same time that we consider her as connected with the health of the future generation.

A few months ago, Dr. Samuel McC. Hamill of Philadelphia, who is the Director of Child Welfare of the Pennsylvania Committee of Public Safety, came to our department and asked for help in studying this last point, the influence of the health of women, particularly women employed in the workshops of Pennsylvania, upon child welfare, upon the way in which the child starts in life, and upon the social background as he progresses. In response to this appeal, the Industrial Board authorized the sending out of a questionnaire to the employers of Pennsylvania on the subject of the employment of women, especially married women. It was rather an unusual questionnaire; and because of its exceedingly unusual quality, it seemed to me that the employers of Pennsylvania were particularly broad-minded in the attention that they accorded it.

There are thirty thousand Pennsylvania employers on the mailing list of the Department of Labor and Industry. It was not deemed wise to send this questionnaire to this whole number; but, on the ground that 25 per cent. of a whole body of opinion will give ground for clear judgment, it was decided to send it to about one quarter of these thirty thousand employers. Eight thousand questionnaires were sent out, and something over five thousand were returned. The questionnaire took up such points as the employment of women before 1914, their employment at that time in office work and manufacturing; their employment since that time in manufacturing, clerical work and other occupations; the number of single women employed, the number of married women, and the number of widows; the number of women having little children whose welfare might be influenced. It ran also into the question of wages, the matter of comfort for the children, and embraced a number of other points.

A partial summary of these replies has become available. Among the firms reporting, it was apparently the case that almost exactly one-fourth of the women employed were married. Of these married women again almost exactly one-fourth were widows. That left three-fourths who were not widows, but were living in the married state, with some children at home, and perhaps having the prospect of bringing more children into the world. There has come from Europe a good deal of material on the subject of the mothers who are employed almost up to the time of the birth of their children, and immediaely afterwards. With us, up to the present that has been practically a negligible quantity if we may trust these reports. When, however, we consider that three-fourths of the married women employed in Pennsylvania have homes to look after and children to maintain, educate and bring up, we know that we are face to face with an important hazard, not arising wholly from the war emergency, but undoubtedly to be increased by it. To nobody in Pennsylvania can this fact be presented with a greater surety that it will be considered seriously, and that as a result the married women going into industries will be guided and guarded, not only by legislation, but by an aroused public sentiment, than to this body of physicians gathered here this morning.

It seems to me there are certain hazards to women coming from the whole industrial situation, especially during this war emergency, concerning which we must appeal to you as the special group of physicians in the state interested in the efficiency, as well as the health of the workers in these industries. The special hazards to women, over and above the hazards to other workers, are three: unsuitable occupation, night work, and speeding up. I would not say that a woman ought not to take her proper share of the hardship of the present time and of the risk of industry, whenever she may go into it. I have small sympathy with the thought that a woman may not go into certain occupations because they are hazardous. As human beings, we take our risk together in a time of general danger; and as human beings, I have never noticed that women were any slower than men in taking these hazards. Indeed, we all know that there is one hazard that women take that no man has ever taken; and that very few women hesitate to take their share of that hazard. Therefore, because of their bravery in life. I think that we may trust their bravery as they go into the industries. But above the hazards that all must share, I believe there are certain occupations that women should not go into, because of the special risk to them, and the connection of that risk with this other great life risk which women must take.

Any occupation in which women must stand continuously should be avoided. Visiting plants where women are newly employed, I have seen them standing, with no possibility of sitting down all day long. I could not help thinking of the hazard to their personal health at the present time, and through that, to that other woman's risk that they will later take.

I saw women lifting heavy weights, stretching their arms high above their heads while carrying this weight, beyond the ordinary reach that should be theirs. In another occupation women operate machines requiring several pounds of pressure to be exerted by the foot seventeen times a minute. Think of the multiplication of that through eight or ten hours a day. These, I believe, are things that women should not be asked to do.

There are other industries, I understand, that should bar the employment of women, or at least limit it and restrict it to carefully guarded circumstances. Such industries are those connected with chemicals. I am not speaking exclusively of such industries as related to explosives. The whole eastern part of the state was shocked by the disaster at the Eddystone works, and the western part has had its shock also. Such risks must be taken by workers regardless of sex; but if there are risks from the chemicals to women that are different from those to men, the difference being due to the difference in sex, women should be guarded from these risks. The industrial physicians of the state should pass on the appropriate occupations for women in these lines, and get them into the part of the industry that offers no more risk to them than to the men.

Night work is a much greater risk to women than to men. To illustrate — the case of a woman occupied in night duty in a railway tower. It was necessary for her to go down at times to the platform and feel around in the dark for a paper that had been thrown off from the passing train. Often by the time she could find it, the train was gone and the woman was alone in an isolated spot, exposed to dangers due to her sex. Surely that is one of the occupations that may be perfectly proper for women in the daytime, but not at night.

We are told that night work is an extra hazard for any one. If that is true for human beings in general, it must be still more true for women; because of their more delicate structural and nervous organism. I have been thankful many times, during this last year, for the fact that in Pennsylvania we have a law that has given us time to think about things; and among the subjects for serious thought is this question of night work for women. The more I have studied it and heard about its consequences in other countries, and in other parts of our own country, the more I have become convinced that night work for women is one of the things against which we ought to make a permanent guard.

There is the question also of the heaviness of the industry. In Great Britain the industries have been divided into four classes: the very heavy, the heavy, the light, and the very light. The unhesitating conviction of the government committee that studied these classes is that women should be put upon only the light and very light work. In the opinion of the committee, it is an economic waste to put women on heavy or very heavy labor, and also to put men on light or very light labor. Their recommendation is likewise that women should not do night work unless through absolute necessity. One of the great advantages of these studies on the other side is that we may take the advice given us in this way, and plan our path so as to use the labor of women to real advantage.

It was a great mistake, in the interests of efficiency when one of the railways employed women to lay ties. No woman could succeed in work of that kind in the long run. In certain parts of this state, women have been put into an occupation which seems pleasant, but which involves the lifting of considerable weight above the head at intervals. One of the women so placed was a magnificent specimen of physical development. For a number of weeks after entering this occupation she looked better and better. She was in the fresh air, and that agreed with her. I saw her last week, however, after an interval of about six weeks. Her face was drawn; she was beginning to look chronically tired; she had lost her temper and I was perfectly convinced that this was another illustration of the inefficient use of woman's labor, tending to the discrediting of their employment in that particular occupation.

To be considered along with the character of the work and whether the work is done during the day or the night, is the question of speeding up. A lot of work is performed on the piecework plan. Where women are employed to take the places of men, the system of piecework is largely used; and in some places an infernal system of speeding up is employed. In one plant, the superintendent explained to me the means that he deliberately took to increase the speed. He did not establish a flat rate, but a general rate on the production of over or under such an amount; and then he told the women (but I was not able to find out that he told the men) that if they increased enough over this margin that he had established, he would give them some further increase in wages. He did not tell them how much over it would have to be, nor how much increase they would get. His own naive remark was, "You have no idea how that brings them on. It is always something ahead, and it is one of the elements that helps to keep them at work." I used the word "infernal" about that, and I think you will agree with me; because if there was ever anything that was not open and above board, it was that. He said that when they had established a new record, he would repeat the process. That is an illustration of the evil of speeding up under the piecework plan that the women meet as they go into the workshops. The majority of them go into the shops with an honest desire to serve their country, and to put the industry "over the top," just as every campaign has gone. They feel, as they do their work, that it is their duty to fill the places of the men and to answer the need of the present time. Because this is the case the women should have all the help that we can give them in the Department of Labor and Industry, and all the help that the physicians of the state, especially this body of physicians, can give them.

Women have been appealed to on every possible ground to help save the country. They have responded with enthusiasm, with efficiency on the whole, and with the desire to serve their country and the cause of womanhood itself. The field of industry is open to them today; but there are certain safeguards that I believe we will all agree should be placed around them.

The plea that I have to present specifically to you is this: that you will watch the workshops of Pennsylvania and note the things that women ought not to do, and also the things that they may do without additional risk. We want to know which are the ones that are right and which are the ones that are wrong for women to engage in. If you physicians will make a study of that and report to this department your impressions of these things, this department will be in a position to give official advice, not merely according to its own views, but advice backed up by the medical and surgical opinion of the state of Pennsylvania. Such advice will tend not only to the protection of the women, but also to the efficiency of the country. With the advice that we shall be able to give them, as the result of your investigations, we can guide the women so that they may be able to engage safely in new industries releasing the men for other service, while industry goes forward unchecked.

In this time of national emergency and danger, we all want to do what we can for love of our country, for the state of Pennsylvania, and for the general good of the world. Women have never been slow to give themselves to these lines, and are not slow today. It only remains to see that they give themselves to the best effect, so that the sacrifice that they willingly make may not be made in vain.

Dr. Patterson: I am sure that we are all agreed in assuring Mrs. Semple that she may count on the cooperation of the members of this organization in this work.

It is necessary to make a change in the program. I regret to say that I have received a telegram from Dr. Alfred Stengel, Professor of Medicine in the University of Pennsylvania, Philadelphia, stating that he has been detained at a consultation and will be unable to present his paper on "The Reconstruction and Rehabilitation of the Diseased," which was to have been the first paper in the Symposium on "Reconstruction and Rehabilitation." The absence of Dr. Stengel will allow time for some motion pictures showing how those that have become crippled have mastered their disability and become self-supporting members of the community. These pictures will be shown by Captain Samuels of the Surgeon General's office.

Over sixty of the industrial physicians of Pennsylvania have answered the call to the colors, and sixty industries have had to replace these men with other surgeons. The proper balance of medical service is one which should invite care and attention, and I know of no one better able to elucidate this than our respected friend and teacher, Doctor, now Major, Edward Martin, of the University of Pennsylvania, whose splendid work and untiring zeal have been an inspiration to us all.

HOW THE INDUSTRIAL SURGEON CAN BEST COOPERATE WITH THE GOVERNMENT TO WIN THE WAR

EDWARD MARTIN, M.D.
Major, M. O. R. C., U. S. Army
WASHINGTON, D. C.

I find myself put down for a paper entitled, "How the Industrial Surgeon Can Best Cooperate with the Government to Win the War." That title was not one of my own selection, because it implies a certain knowledge of this intricate problem, which, unfortunately, I do not possess. Had I had the choosing of that title, I should have changed it to How the Government Can Best Cooperate with the Industrial Surgeon to Win the War; because unostentatiously the industrial surgeons have watched over the lives and health of a tremendous number of men. With such few numbers, and such organization, you have so admirably, so quietly and so consistently done what we Americans usually do, "deliver the goods." Therefore, I say that the title of this paper should be, How Shall the United States Government Cooperate with You, you who have proved your propositions and have been able to withstand windstorms, the wind being made by the human voice with a thousand schemes, a thousand plans, which excited attention in proportion to the loudness of the voice and the violence of the languge. We should have records—not by ones or dozens, but by hundreds of thousands—as to the immediate and remote efficiency of our therapeutic measures. If you accomplish what is really your high destiny, it implies a set of records that will be complete, covering the following points in regard to the question of efficiency.

When we measure the efficiency of a treatment, we wish to know the condition of the individual before treatment, when a certain treatment was applied, how soon after injury it was instituted, by whom it was administered, what the immediate result was in reference to surgery, and what the remote result was as regards the subsequent efficiency of the individual. The word reconstruction, in my opinion, is not a happy one. Perhaps rehabilitation, which is rather a clumsy term, would be better; but what we are after is the bringing back of each individual to the highest grade and state of efficiency possible within the briefest space of time. Your work is like army work in that respect. Our object is to get men back on the firing line and capable of going "full speed ahead." You do it too, and do it under most adverse circumstances, by constant and careful supervision; and the army will soon be doing it. In the army, potentially influential men have been doing it, but it has not been practiced by the majority of this body of men who are not sufficiently fortunate to be here today. What has happened in the army is this:

While all who are sanitarians place emphasis on prevention, which lies in prompt diagnosis and skilful treatment, the apparent fact remains (although I can make no statement backed by figures) that the workers in shipyards and iron works are less subject to epidemic diseases and venereal infection than are soldiers, in spite of the fact that they are surrounded by all their safeguards, including the safety zone. Your function is, in the first place, to demonstrate that fact, if it be so; and then to demonstrate the reason and, having found it, to apply it to that other army, not more important than yours —the army of the soldier.

This whole splendid work which you are doing, which is going to touch every medical school and every hospital in the country, will lead you far and long. I spoke of the windstorm going through the country, the desire of every individual to do something to help; so I am going to ask you for something definite in your line of operation. The question was asked me as to the most desirable antiseptic to employ. You see, I am making this concrete. The question was asked, and the Surgeon-General's office requested me to take the clinical side of it. Therefore, I am speaking with some authority, aside from my personal wish to have this problem settled by you. The Carrel-Dakin treatment is having a certain vogue; and any one who denies its efficiency is speaking without having given it a trial. It is a great advance in surgery, but it is open to the objection that it requires an elaborate apparatus and considerable attention to details. Dakin made from chlorin a modified solution; but it proved irritating. He then tried to rob it of its irritating qualities, and did so to some extent; but in the modified solution the chlorin is set free in twenty minutes and the treatment has to be repeated. Therefore, Dakin tried to get something that would not have to be repeated so frequently. He got dichloramin-T, which was dissolved in eucalyptol. The trials of this in the hands of a number of surgeons were not satisfactory, because it broke down easily and was irritating. Moreover, it could not be placed under thick dressings. I was unwilling to recommend it, because I considered it unsuitable.

Dakin went further into the matter of the solvent, and found that he could use heated paraffin wax through which chlorin was driven. It could be used as a dressing, and was nonirritating. It seemed to fulfill all the requirements of a prolonged, gentle and nonirritating antiseptic.

We have been using this latest solvent, and I find that it is the most efficient, most easily applied antiseptic that I have ever used. I ask you, during the next month, if you will, to give it a fair trial in your industrial work, but only in the hands of good men. The big point in surgery, as everywhere else, is the man behind the gun.

The technic is as simple as that of iodin. The wound is brushed with a 3 to 5 per cent. solution of dichloramin-chlorcosane. If it is a raw surface, such as a burn, with destruction of the skin, it is protected against the removal of a sticking dressing by putting over it a piece of paraffined mosquito netting with a wide mesh. Abbott's mosquito netting is fine. Over that is applied the dressing, which should be as thin as circumstances will admit of. This is fastened lightly in place. That is the whole dressing. It may be applied to a burn or to a deep wound leading down into a focus, but in all instances all dead parts should be removed. It is repeated once a day. Under this dressing we can bring broad granulating surfaces together, and have them hold; and the secretion is cut down to a minimum.

We believe that the usual ward dressing for a wound constitutes a pus focus. The only reason for using thick dressings is one connected with the menage of the hospital and the comfort of the nurse. Pus is less offensive when concealed by a thick dressing.

I ask you, if you will, to give this antiseptic a fair trial in the hands of good men; and after the end of the month, or earlier, send me you impressions — not an enthusiastic report, but your clear, honest conviction as to whether it is good or not, and why. Do not make a report of one case that did well; but simply state the fact that you have treated so many cases, and give the results with regard to the time of healing and complications, stating whether these were better than before or not. Finally, you may say, if true: "We have noticed less discharge and less expense, and have adopted the method"; for the test as to whether you like a thing lies in your adopting it.

The resident physician, who is usually against everything the hospital does and is not dying of too great efficiency, is taking up this treatment with the new solvent, and keeping it up in each hospital into which it has been introduced.

One more word as to the question of reconstruction: I suppose that Washington has thousands of schemes and plans for reconstruction. The winds have been blowing from all quarters; but the problem that is here now in its most active form, and the problem that is likely to be most important to the men whom selective service brings out, is the question of flat-foot which has not been under the doctor's care and has not been attended to. Now is the time to attend to it, and you are the men to drive this truth home.

Dr. Patterson: The discussion on this subject will be opened by Major Joseph C. Bloodgood, M.D., of Baltimore, Md., and now in the Medical Officers' Reserve Corps, Washington, D. C. Major Bloodgood needs no formal introduction to those assembled here, as we have all profited by the value of his presence at our meetings.

DISCUSSION

Major Joseph C. Bloodgood, M. R. C., U. S. A., Baltimore, Md.: The winning of the war apparently depends as much upon the efficiency and coordination of the industrial army at home as upon the fighting army overseas. It is quite possible that inefficiency and lack of cooperation and coordination of the industrial army at home may critically handicap the efficiency of the fighting forces in France.

The Government has a larger control over the fighting army than over the industrial army. Nevertheless, the principles which underlie the creation of an efficient fighting force are the same as for the development of the industrial army.

On the whole, the industrial army starts off with a larger number of men previously trained in the special duties than the fighting army.

The words industrial surgeon used in the title of this paper mean the medical department of the great industries of this country. The problems of these medical departments are almost identical with the medical departments of the army, navy and public health service. The latter, however, have greater authority, because they are integral parts of a great military organization.

The functions of both medical departments are to a large extent identical. The functions begin with the physical examination which determines whether the individual to be a soldier or a worker is physically fit for the duties for which he is to be trained. After the selection of the men for the fighting, or for the industrial army, it is the responsibility of the medical department to protect them from disease and to teach them personal hygiene. The medical departments of the industries should not only care for the laborers themselves, but should have supervision over the health and hygienic environment of the families of the workers.

The problem of selecting men mentally and physically fit for general military service or for the various types of work in the industries is less difficult and less expensive than the problem of the rehabilitation of those with remediable defects.

The urgency for the training of a large army in the shortest space of time compels the Government to concern itself chiefly with the selection of registrants and applicants in the groups mentally and physically fit for general military service and mentally and physically fit for special or limited military service. Those registrants and applicants who have remediable defects which temporarily make them unfit for general or limited military service, must be placed in the so-called deferred remediable group. Undoubtedly the Government will not undertake the rehabilitation of these remediable defects until military necessity compels it to enter this field of reconstruction.

The same considerations may be present in relation to the industrial army. It is quite possible, however, that many of the men with remediable defects who are not fit for general or limited military service may be fit for efficient work in some industry. We should therefore consider now whether the first step in the cooperation between the industrial surgeon and the Government should not begin with an investigation of the registrants and applicants who, on account of remediable defects, must be placed in the deferred remediable group. Every man in this group who can be employed by an industry should release from that industry a man fit either for general military service or limited military service. At the present time there is no provision for the development of such coordination. I would suggest to the medical departments of the great industries that they seriously consider this question and confer with the Provost Marshal General and the Surgeon General of the Army in order that some scheme of cooperation may be formulated.

When we come to the question of the rehabilitation of men with remediable defects, either by treatment or operation, we are confronted with the difficulty that unless the man is of draft age and is accepted for general military service the cure of his defect depends upon his own volition.

Undoubtedly the medical departments of industries have largely increased the number of the working days of their laborers and the efficiency of their day's work by the medical treatment of certain remediable diseases, such as malaria and hook-worm. But, as far as I can learn, there has been no systematic attempt at the operative cure of remediable defects. The largest remediable defect which requires an operative cure and which disqualifies for general and for limited military service is hernia. Hernia has also been, from the standpoint of workmen's compensation, a thorn in the side of the industrial surgeon. What can we do with the thousands of cases of unoperated hernia in this country? All the men with this defect are placed in the deferred remediable group. How many of them are incapacitated for efficient industrial labor by this remediable condition?

In the industries, sickness and injury have in the past lowered the efficiency of labor and rendered many incapacitated for further productive labor. In this program your attention is called to the fact by Dr. Loyal A. Shoudy, to the failure to reconstruct and rehabilitate the wounded in industry. He calls it "the nation's neglect." Perhaps the responsibility should be placed upon the industries rather than upon the nation as a whole. If the medical departments of the industries had been allowed to develop the reconstruction of the diseased and wounded in industries, the Government would be in a far better position today with regard to reconstruction of its soldiers.

The great industrial medical and surgical problems are, therefore: (1) The physical examination of workers; (2) hygienic control of the laborers and their families; (3) the selection of work for those laborers with remediable defects; (4) the medical and surgical cure of remediable defects; (5) the reconstruction and rehabilitation of workers incapacitated by disease or injury; (6) the control of hours of work and hours of leisure in order to develop the greatest efficiency in the industrial army.

Before the industrial physicians and surgeons can cooperate with the Government during the war they must cooperate among themselves. To bring about this cooperation there must be a central authority created either by the Government or by the industries themselves. Up to the present time the industries working independently have, to a large extent, failed. Can they succeed now without Government control?

Therefore, if there is to be cooperation with the Government to win this war, the first problem to settle is: Who is to have control of this problem, the Government or the industries?

Dr. Patterson: The next subject concerns vitally every industrial surgeon. We have here, in the State of Pennsylvania, each year, approximately two hundred and seventy-five to three hundred thousand industrial accidents. What is the future of the men meeting with these accidents? Their future usefulness depends to a very material extent on the industrial surgeon and the treatment which is given immediately after the occurrence of the injury.

No matter what treatment is given, some patients are so badly traumatized that amputation is necessary, while in others recovery is followed by a material loss of function in one or more of the extremities.

Have we met our entire obligation to these unfortunate "by-products" of modern industry? If not, then what should we do in the future?

It is my great pleasure and privilege to present to you Dr. Loyal A. Shoudy, Chief Surgeon of the Bethlehem Steel Company, who will speak to us on the subject of, "The Nation's Neglect—the Failure to Reconstruct and Rehabilitate the Wounded in Industry."

THE NATION'S NEGLECT—THE FAILURE TO RECONSTRUCT AND REHABILITATE THE WOUNDED IN INDUSTRY

LOYAL A. SHOUDY, M.D.
Chief Surgeon, Bethlehem Steel Company
BETHLEHEM

I received a letter from my good friend, Dr. Patterson, requesting me to appear before you on this occasion and present a paper on this subject. At first, this floored me; but next I received from him a program in which I noticed that he would discuss what I had to say. I thought I could get away with that, because I would simply introduce the subject and, by a kind of camouflage, put the real discussion of it on him. But now he has switched the program around, and Major Martin and Major Bloodgood have spoken; so I cannot say much.

I think that we all appreciate, so far as looking after the young men is concerned, what the state of Pennsylvania does; and you and I, as men working in this line, industrial surgeons, have been held to our posts, not only through our work and our love of the work, but by the continual remarks that Mr. Palmer and Dr. Patterson have been driving home, that everyone should work for the efficiency and the conservation of the human machine and the labor of Pennsylvania. It has been through Mr. Palmer and Dr. Patterson that we have stuck to our posts.

You know the old story goes "that the reason we do not notice all the things in this world is because the big things overshadow the smaller ones and the latter are lost," or that some things occur now and then and not all in "one heap."

This is true in accidents, in industrial accidents, the same as in any other line.

If I could parade in Harrisburg tomorrow all of the cripples from industry during the past year—men, women and children—headed by those who have lost both eyes, both hands, followed by those who have lost a leg and so on to those who have deformed hands and legs, the thousands of them who were injured in our own state, what would Harrisburg say?

And because these men, women and children were not all injured at one time and in one place you do not notice them.

Add to this procession the crippled and disabled from the state of Ohio, from Illinois, from California and from all the other states, and see what a vast army you have. An army, yes, and of what value? Value! why men there is no value to it. The entire army is a burden, not from choice; they did not choose this disablement; a burden because no one has seen fit to make them over, to lift the burden from our shoulders and make this army self-supporting. And now we are in a war, the size of which I cannot picture to you.

Like many other things, this war has opened our eyes. It is driving home the value of man power, the human machine. Now that Europe has awakened, sees the need of men, so do we. The fighting army, the industrial army, cripples come from both.

For years we have had these cripples from the industrial army and we have not thought it of sufficient importance to care for the rehabilitation and reeducation of these men, and why? Because as with many other things we have not thought the caring for industrial cripples worth while. Men have been plenty, the human machine was cheap, and it was no one's particular business to care for these cripples, But now the story is different. The fighting army is returning the cripples, and the picture which I drew for you is a reality in England today and will be with us tomorrow.

And we see now where all these cripples from the the industrial army could be of value, but we have neglected these men, these cripples of industry, by-products as they are. And to make matters worse, we are still doing it.

In a few scattered instances, private or charitable, some attempt has been made, but small in comparison with the needs. We are planning for the rehabilitation and reeducation of the wounded sailor and soldier, but we have neglected the wounded soldier of the industrial army.

According to figures given out we expect 100,000 disabled men to be returned during the first year of fighting. At least 20,000 of these men will require total or partial vocational reeducation.

Had we as a nation been awake to our needs we would now have the finest of schools for this work, human repair shops where crippled and disabled could be sent, trained and returned useful men in the industrial army. We should have these "human repair shops" for the industrial army as well as for the fighting army.

The industrial soldier is crippled and what becomes of him? Is any one responsible for him? No. He is paid compensation and forgotten. I tell you men, it should be required that every man disabled in industry should be reported to some one in charge, the degree of his disablement should be noted, and in so far as possible corrected. He should be trained, he should not be turned adrift and later become a burden to himself, to you, and to me.

These human repair shops should be under national control and an adequate system worked out for their support. Private support savors of charity and the worker does not ask charity.

Last year in our United States there were 300,000 men disabled, 3,000,000 minor accidents in our industrial army. How many of these are today able to do work sufficient for their support? How many are able to fill in the breach widened by the call to the fighting army?

Today industry cripples a man, crushes a hand, pays compensation, forgets — but the man! That man with proper training could have been returned a useful and self-supporting man. But no, if the industry has cared for him, perhaps a possible highly skilled mechanic is now running an elevator. He has been given no chance to come back.

The industry must now report the injured to the state—why not the state report all disabled to the nation, and the National Government compel the man to enter a human repair shop, be made over and returned a useful member of the community.

But, as in many other cases we are learning a lesson. Had this rehabilitation been in effect for the industrial army what a simple matter to enlarge it for the fighting army.

We who are interested in this work appreciate what a drain on man power has existed through disablement. We have pictured the shortage all along but no one would heed; but now—well, would it not be nice if we could throw into the industrial army the 50,000 disabled from last year, made able again through a national system of rehabilitation—reconstruction?

What has been done for the industrial cripple, what is being done, and what will be done?

In the past the injured man has been treated at the nearest hospital on charity or some such arrangement; when able, discharged and returned to the plant helpless. He may perchance have fallen into the hands of the ambulance chaser. No one has had any interest in him; there is no one to advise him; perhaps he was given a watchman's job. What are we doing today? About the same.

Compensation has helped, especially where the companies are self-insured. But in cases where the entire liability is handled through the insurance company, he is cared for for fourteen days and then dropped, and the employer's interest if there ever was any is ended.

And even today when we know that the Army and Navy are making great preparations for the care, rehabilitation and reeducation of their wounded, we are not making one move to help the injured of our industrial army.

As things are now presented the task is great, but can and should be accomplished. Injured workmen are not all willing to be made over; some prefer to be objects of pity and charity, and I want to add that some of the decisions handed down by our referees compelling compensation to be paid to the injured, instead of insisting that the injured submit to operation, rehabilitation, are unfair to industry, the man, and the country.

What should be done is that we should develop a school, a workshop, for the rehabilitation and reeducation of our disabled industrial army. We should no longer allow cripples to be a waste product of industry. We should bend every effort to have the injured man returned in the best possible condition for work. We should cease to make flagmen, watchmen, etc., from all our cripples; we should make them over and awake them to their new possibilities and usefulness.

You all know the cry "Safety First" is but a few years old. We all agree that it is better to prevent accidents than to make over cripples.

The safety fight is not yet won, but the gains have been and are tremendous. Let us then take up this rehabilitation work and we will make the biggest boosters for safety that this movement has ever known.

We are living in a great age and we have seen great accomplishments along all lines of endeavor. We have seen this old world grow and develop until we thought there was no more room for improvement. And today we are seeing the folly of our ways.

And, gentlemen, today this old world is using man power, human machines, as they never have been used before. The industrial army is being pushed to the limit to keep the fighting army, the human machine at the front, supplied with the necessary ammunition to defeat the Hun. The cripples of the fighting army will be cared for, but who will care for the industrial cripples?

Our country is a leader in the industrial world as regards the equipment of our factories, transportation, and our farms, but we are not a leader in the training of those who are to handle this equipment. We lack industrial teaching, preparation.

"All progressive nations are competitors in this world's commerce. The degree of efficiency with which this commerce is carried on will determine the relative standard of the nations as to importance and leadership.

"The United States has the opportunity to become the leading industrial nation of the world and all depends on efficiency in our factories, farms and transportation. Our vocational schools are working hard to the end that all our youths may enter their life's work fully equipped and properly prepared to insure the maximum of success."

We must support this vocational idea and we must push for this rehabilitation and reeducation of the injured workman.

It is our problem as industrial physicians and surgeons to cause industry to see the necessity of conserving man power, and we must be the leaders in the work for the rehabilitation and reeducation of the injured in industry.

"The value of occupational therapy in the convalescence of the disabled in the fighting army has been demonstrated by the experience of foreign countries beyond any possible point of debate. The problem for us is not whether the men shall be given occupational therapy and treated along the most progressive lines of medicine, it is rather the problem of ascertaining how best medical treatment and occupational therapy may contribute toward the ultimate goal of industrial rehabilitation."

The experience of foreign countries in rehabilitation emphasizes the necessity of three fundamental principles: (1) The value of practical occupation; (2) the importance of trained teachers; (3) the urgency of immediate occupation in convalescence.

The rehabilitation of the fighting army will be somewhat different, the men will average a better type in intelligence, but the principle is the same.

Vocational training should start in the hospital workshop and should be toward some definite end, and without question it should be supervised by able, competent teachers, teachers who understand men as well as the trade undertaken. The industrial doctor and the teacher must work as one. And again we must learn as the fighting injured have learned that all training must begin early. Gentlemen, now is the time. This war has its lessons; and the value of human labor is today more appreciated than ever before.

In times past we have not noted these cripples because, as I stated before, they are scattered over a great area. But soon this will change and when three hundred or more crippled men are returned from the battle front—men who have given their all for us—then we will appreciate the value of hands, arms, feet and eyes.

And I say to you that now is the time. Let us be ready and step in with the federal government and provide for the industrial cripple along with the war cripple. Let us do our part to make right this neglect.

Let us have in our state a federal hospital, fully equipped for this great work; let us enter into this now, and when this awful war is over and when the day comes that all the war cripples have been made over into men who will be able to support themselves; when that time comes let us not close the doors of this great workshop, but let us say, "Look here, Uncle Sam, let us continue this good work." And let it go on and on until there will be no more helpless men, but each injured will be turned back anew; and the work so done that it will reflect to the credit of this great commonwealth.

Now let us get together, let us secure this human workshop for Pennsylvania, let it be directly under federal control and let us work out a way to tie in with them.

We, the state, the nation, have neglected our cripples. But a way is opening to make amends, and let us be ready to take advantage of the opportunity and Dr. Patterson will never again be able to assign this topic for discussion.

Men, this is a terrible war — it will not be without its lessons, and one of the greatest lessons already forced home is the value of man power, of human machines, and if through the needed repair of these broken fighting machines we are able to bring to light the full value of the broken industrial machines we will have learned a lesson the value of which will be a blessing to all mankind and in the end God grant that happiness will crowd misery and sorrow from the industrial home.

DISCUSSION

Dr. Patterson: Your chairman took the liberty of putting himself on the program to discuss Dr. Shoudy's paper; because, in his work in connection with this Department of Labor and Industry, he has had impressed on him most forcibly the frightful toll that industrial accidents are taking from among our workers. In 1916, we had 255,616 industrial accidents in our commonwealth. In 1917, there were 233,425 accidents. These accidents resulted in the loss of more than three million working days in 1916; and in 1917, it is the same story of suffering and sorrow.

The one thought that I want to try to leave with you is that we, in Pennsylvania and every other state in the Union, have absolutely neglected the physical reconstruction and rehabilitation of the most valuable material that we possess, our human labor. The fault, to my mind, is due to the fact that the civil hospital is inadequately equipped to handle these cases. This is the whole secret of the trouble. The surgical staff of these hospitals have not the knowledge of industrial processes, nor is the hospital equipped with the necessary apparatus whereby the physical reconstruction can be accomplished to the ultimate end of complete recovery. It is my hope that out of this war will come the establishment in Pennsylvania by the Surgeon-General, or whatever authority controls, of reconstruction hospitals; and that at the end of the war, these will be taken over by our state government and operated for all time; so that the man who meets with an accident in any industry shall be restored and put back in his proper place in the industry. The men who have been restored, and who are today again taking their rightful place in industry, have done it in spite of the lack of proper facilities, and it is going to be our great pleasure and privilege to have the first showing before any audience of the films prepared by the United States government to illustrate how cripples can be restored. It is now my pleasure to introduce Captain Samuels of the Sanitary Corps, National Army, who will show you these films.

THE WAY OUT

ARTHUR H. SAMUELS
Captain, Sanitary Corps, National Army
WASHINGTON, D. C.

In Union Square, New York, a few weeks ago an armless newsdealer stood in the sunlight working busily. A large crowd of passers-by stood about him watching. Many of them had seen this man fold his papers and make change with the stump of an arm before, but they had simply glanced at him and gone on. This time two men in uniform with a motion picture camera arrested their attention.

These people were curious to know why the picture was being taken. A few guessed. An editorial writer on a New York newspaper figured it out himself and wrote an article about it.

War means wounded men, men permanently maimed, and these men present a special problem and an obligation not recognized in other wars. Men were crippled in former wars and were left in the years that followed, little more than unburied dead, drawing their meager pension and living out the balance of their lives with little possibility of usefulness. In the present war, after efficiency has been carried out to the utmost in destructive effort, it is also the force which is salvaging what is left from the wreck.

The United States Government is profiting by the example of our Allies in the physical and mental rehabilitation of its soldiers who have lost one or both arms or legs, or become blind. It is going to teach its men all sorts of useful work that they can do with what the war has left of their once wonderful bodies.

That is why the newsman in Union Square was being filmed; that is why he and other handicapped men from all parts of America, men with various kinds of disabilities, have enthusiastically spent tiring hours before the motion picture camera and gone through days of the arduous experience of being photographed.

The pictures you are going to see were taken for a very definite purpose. I believe they are the first of the kind ever made. They are not clinical pictures. Every effort was made to get away as far as possible from anything that savored of a medical or hospital atmosphere.

When a man has lost his legs or his arms he is at first hopeless, dejected, disconsolate. You can talk to him and preach to him, and tell him to cheer up, but you may as well try to stem the tides of the ocean. Talk will not enthuse him. He must be shown. He must be interested, not by generic expressions of medical facts, but by concrete, specific examples of what others as badly off as he is, or worse, can do and are doing.

The effectiveness of reconstruction depends directly upon the wounded soldier's attitude of mind. Unless he is really eager to get back to normal nothing will move him. We cannot coerce him. We cannot make him learn a trade. Our first real job, then, is to inspire him, to fill his soul with hope; and the way to do that is to get him interested.

The idea of these motion pictures is to be interesting, and then to be instructive, but to be instructive by suggestion. We have attempted to do this by pictures of cripples who have made good; the sort of men who would not allow themselves to be licked before they started.

Each reel is an episode in a man's life, showing some of the things he does as he goes about his daily business like any other normal human being. There has been no straining after the dramatic; nothing was staged. The only difficulty we encountered was in stopping our actors from looking into the camera.

I am not going to describe the pictures in further detail. If they do not speak for themselves they are not good pictures. In producing them the Famous Players-Lasky Corporation placed at the disposal of the Army, without cost, all of the wonderful equipment of that organization.

We do not expect to inspire and stimulate every wounded soldier when he sees these pictures, but if we can stir up a desire in some of these disconsolate men, if we can make them feel that the future is not going to be dark, if we can suggest to them that no man need be a cripple so long as he has brains and will try, we shall have taken the first important step.

Michael Dowling, a bank president of Minnesota, whose picture you will see, said to an audience of cripples recently, "From his neck down a man is worth about a dollar and a half a day; from his neck up he may be worth a hundred thousand dollars a year." Mr. Dowling, as you will see, has a right to make such a statement, and the business men of America will do well to bear it in mind.

In selecting our subjects for these pictures we have taken a bank president, a county judge, a draftsman, a purchasing agent, and a newsman. Each comes from a different locality. Each represents a type. Others of various disabilities and vocations are in preparation.

The reels will be shown in the hospitals in France to our men who have been disabled, but they will not be run off one after another. Each subject will be part of a program of entertainment. Perhaps on Monday Mr. Young will follow Charlie Chaplin. On Wednesday, Mr. Bigler, the purchasing agent, may precede Mary Pickford. In other words, the most effective use of the reels will be as an entertainment and not as an instruction.

The showing of the films in France, however, is just the beginning of our task, for with the reeducation of the handicapped soldier must come the reeducation of an unaroused, lethargic public. The men and women of America are sympathetic enough and generous in their charities, but they must be more than that if the reconstruction work of the Army is to be done effectively.

We must educate them by pictures and by printer's ink to the point where they can distinguish between the self-respecting cripple and the beggar on the sidewalk. We must show them that maudlin sympathy is more vicious even than neglect; but that intelligent sympathy, and encouragement, and the real opportunity to make good in business and professional life is what the handicapped man craves, and must have.

By the accomplishments of courageous men such as we have filmed and by all methods of subtle suggestion and straight talk this is going to be brought about. This will pave the way out.

Dr. Edward Martin, Philadelphia: This is essentially a meeting of appreciation. I move that a committee of three be appointed to institute rehabilitation in Pennsylvania workers and start it now, with the cooperation of the present chairman.

Dr. Loyal A. Shoudy, Bethlehem: I second the motion.

Dr. Patterson: All in favor will say "Aye"; those opposed, "No." The "ayes" have it.

As members of this committee I appoint Major Edward Martin, Dr. Loyal A. Shoudy, and Dr. Francis D. Patterson, chairman.

The meeting now stands adjourned until two o'clock.

AFTERNOON SESSION

The meeting was called to order by the Chairman, Dr. Francis D. Patterson, at 2:30 p. m.

Dr. Patterson: The meeting will come to order. If there is any subject which has been a matter of dispute, it has been that of traumatic hernia. Compensation boards have made almost as many rulings as there are boards. It is, therefore, of extreme importance that this matter should be discussed; and it is my pleasure to introduce to you, this afternoon, Dr. A. W. Colcord, company surgeon of the Carnegie Steel Company, Clairton, who will talk to us on the subject of "Hernia—Should It Be classed as a Compensable Injury or a Disease?"

HERNIA—SHOULD IT BE CLASSED AS A COMPENSABLE INJURY OR A DISEASE?

A. W. COLCORD, M.D.
Company Surgeon, Carnegie Steel Company
CLAIRTON

HISTORY

The subject of hernia is as old as medicine. Among the earliest writings are those of Celsus, 200 B. C., who held that hernia has two causes: relaxation and rupture. The relaxation cases should be reduced, the rupture cases operated on. He took his ideas from Archegenes, a Greek writer who lived long before, and these ideas held for almost 2,000 years.

Galen, shortly after Christ, accepted these views but worked out a more exact anatomy.

He described the iliac fascia and Poupart's ligament, and pointed out the difference between funicular and testicular hernia. He gave the causes of hernia as predisposing, antecedent and immediate.

During the middle ages the operation for hernia fell into the hands of strolling mountebanks and so remained till the time of Gui de Chauliac in the fourteenth century. However, the ideas of Celsus still prevailed, nor do we see much advancement in hernia during the rise of anatomy in the sixteenth century even in the hands of such brilliant workers as Sylvius, Vesalius and Fallopius. The operation for hernia met its next great development in the early eighteenth century with such men as Fabricius and Mary. Then came the great work of Benevoli, who in 1797 declared that a previous lengthening of mesentery was necessary to the formation of a hernia. Scarpa, one of the greatest surgeons of his time, denied this in 1821, and offered in its place the theory of intra-abdominal pressure with counter pressure of the abdominal walls. He claimed that hernia was caused by a disproportion in these two opposing forces, the hernia appearing at the weakest point in the abdominal wall.

No doubt the greatest contribution to the subject of hernia, especially its cause was the monumental work of Sir Astley Cooper, published 1804-7. During his whole professional life he dissected from 6 to 8 o'clock every morning. He studied the cadavers of a large number of male infants and little boys and gave us our first correct idea of the relation of the small open funicular canal, and its gradual dilatation by the omental wedge, to the formation of inguinal hernia. In reading his atlas on this subject, one wonders at its completeness and at the beauty and accuracy of its plates. But his operations did not cure hernia. It needed the antisepsis of Lister, developed 1865 to 1890, and the work of Bassini of Italy, Halsted of America, and McEwen of Scotland, who about 1887 developed and published almost simultaneously the modern operation for its radical cure.

These great advances have made the operation for the cure of hernia safe, easy and practically certain. So emphatically is this true that I believe we who come in contact with so many cases among industrial workers should urge in every case, unless there is some unusual contra-indications, that the hernia be operated on. The custom of most corporations to bear this expense among its own employees makes this within the reach of the poorest.

The development of modern industry with men employed by thousands, and the passage of compensation laws in the various states have raised the question of the cause of hernia, of the relative importance of congenital defect, trauma and occupation as factors. The next great advance must be the threshing out of this very important question by industrial surgeons and an agreement among surgeons, employers, employees, compensation boards and courts as to which cases should be compensated with justice to both employer and employee.

CAUSES

It is hard to draw a line between fact and theory. Many supposed facts of yesterday are today proven to be only incorrect theories. Many of our fondest beliefs of today will tomorrow prove to be false.

A theory is a group of hooks on which we may hang related facts.

Men once believed that the earth was flat and that the sun revolved around it once a day. It was a convenient theory and seemed to fit all the facts. For hundreds of years everybody believed it, partly because it was handed down from the fathers and had the backing of long acceptance; partly because the best men of their own time believed and taught it; and partly because it accorded with their own reasoning, observation and common sense. Then along came a visionary fellow from Genoa and tried to overturn all of this, for he said that the earth was round and that you could sail around it. Of course this was heresy, in the church and out of it. It took a generation to convince the world of the truth. As in most all discoveries, the skeptics of the time were never convinced; they simply died off in due time and got out of the way.

For hundreds of years it was taught that the most important factor in the cause of hernia was trauma, a tear from straining, lifting, too sudden increase in intra-abdominal pressure. Then Hopkins-Coley and a number of other observers of our own generation, breaking through the old crust, declared that "traumatic hernia" does not exist. In the historic words of the farmer at the circus: "There aint no such animal." Of course, when we make statements like the above we always except examples of direct violence. If we use force enough we can tear a hole in the abdominal wall anywhere and allow a viscus to protrude.

They have eliminated traumatic hernia and replaced it with the theory of open rings. No industrial surgeon is now considered orthodox unless he can subscribe to a creed somewhat as follows: (1) Every open ring is a congenital defect and is a potential hernia. It is very probable that it will some day develop into a hernia. (2) Every hernia was once an open ring which gradually allowed the bowel to push the sac coverings ahead of it through the opening — and there you have it. (3) No amount of work, straining, lifting, jumping, etc., can produce a hernia in a man unless he have this opening.

The writer once subscribed to this creed. It was not until he had made several thousand examinations, had a number of hernias develop among these, and had found they were not recorded as having had open rings, that he began to grow skeptical.

I am now convinced that we must look farther for a cause of hernia than the open ring. Suppose a man has been exposed to smallpox a thousand times and does not get it, does this not prove his immunity? Suppose we examine a man at the age of 30. He has an open ring easily admitting the middle finger and easily distensible. He has passed through the playtime of youth—played football in college and engaged in some strenuous occupation in adult life. He has done the straining, lifting, etc., to furnish the exciting cause of a hernia thousands of times. If a hernia was to form, would it not have formed long ago? Has he not proven his immunity to a hernia just as certainly as was the man proven immune to smallpox? If you removed the skin and fascia from the open ring and reached through and seized the gut with a pair of forceps, I do not believe you could pull it through. The idea of a long mesentery, originated by Benevoli, was accepted by many English surgeons in the nineteenth century, notably Sir Astley Cooper. Dr. Hudson of the du Pont Company is an ardent believer in this theory.

Health is an adjustment of our body to its environment. Each organ has this power of adjustment within certain limits. When this limit is exceeded, injury and disease result. The heart adjusts itself to running, walking, sitting or lying, the blood pressure adjusts itself to the various conditions, rising in cerebral compression, arteriosclerosis and uremia, and falling during sleep or shock.

If continued strain is put on the heart its walls enlarge and thicken. If intra-abdominal pressure increases over a considerable period of time, the muscular walls become thicker and stronger. This is especially true in manual laborers and it is this compensatory strengthening of abdominal walls that usually prevents the laborer from getting hernia more frequently than the clerk. In studying the underlying cause of hernia, we find two opposing forces: (1) Intra-abdominal pressure; (2) the resisting abdominal walls. In the normal individual this resistance is enough to meet the ordinary pressure plus a margin for periods of greatly increased pressure such as cramps, straining at stool, childbirth, coughing, sneezing, jumping, lifting, gaseous distention, etc. It is evident that whenever this margin of resistance is exceeded by the intra-abdominal pressure, a hernia results. This disproportion between pressure and power of resisting wall may be brought about in two ways: (1) By increase of pressure without compensatory strengthening of wall; (2) by weakening of wall without corresponding fall of pressure. In my opinion, occupation is not a cause of hernia in the normal individual. Under ordinary conditions I do believe hard labor will hasten the formation of a hernia in one who has a congenital defect such as a preformed funicular canal, a weak conjoined tendon, a thin aponeurosis of internal oblique, a weak transversalis fascia, etc., especially where there is a sudden change of occupation as from a clerk to a telephone pole climber, without giving the walls time to strengthen themselves. A strenuous occupation prolonged after the abdominal walls are weakened by old age or disease often exceeds the margin of resistance and a hernia results.

Among the causes of weakening of abdominal walls we may mention: tuberculosis, Bright's disease, diabetes, syphilis, arteriosclerosis, senility and especially presenility. In the ordinary weakening and atrophic changes of old age there is usually a stopping of the hard work of middle life, less and less demand of the resisting wall so that hernia developing in the old age of the normal healthy person is relatively rare. If he had a congenital defect that would cause a hernia he would have developed it earlier in life. But in presenility, in the changes that come to some men between 35 and 50, the laborer does not stop his hard work, the abdominal wall weakens and the exciting cause continues, and it is here that I find the greater number of hernias—at a guess I should say 75 per cent.

TRAUMATIC HERNIA

The subject of traumatic hernia has been so extensively and so well covered that I can add nothing to the splendid papers of Hopkins, Sheen and Coley, and I most heartily subscribe to their conclusions.

Bilfinger[1] believes that a true traumatic hernia should fulfil the following conditions: (1) "The hernia must be completely developed immediately after or at least within a very few days after the receipt of the injury." (2) "There must have been no predisposition to hernia, no matter of what nature; thus no latent hernia, no empty hernial sac."

Coley[2] says: "We would define traumatic hernia as a hernia resulting from the direct application of force to that portion of the abdominal wall at which the hernia appears, or a hernia resulting from the indirect application of force, causing greatly increased intra-abdominal pressure."

"Whether the hernia follows the natural openings in the abdomen, inguinal or crural canals, or creates a new passageway is immaterial. Bilfinger quotes the opinions of Rose, Voenig, Socin and others, all of which agree that the sudden development of a hernial sac is impossible or contrary to experience. The number of authors who admit the possibility of the occurrence of hernia as a result of trauma is very small."

Coley, among about 2,500 cases of hernia, reports five which he calls "traumatic." Four were caused by kicks in the groin. The other fell against the corner of a car seat. You will note that all were direct violence. In a case reported by Dr. Davis of Washington, D. C., the man fell on a fence paling and tore a hole in all abdominal coverings except the skin. Operation proved it a true hernia.

A case reported by Dr. F. Tilden Brown before the New York Surgical Society, Nov. 11, 1903, is interesting. A horse fell backward upon the man, who "immediately felt pain in left groin and could not stand upright." Examination showed a small hernial protrusion which was reduced by taxis. Ecchymosis followed. Operation thirteen days after revealed "a small sac with a bit of omentum the size of a quill adherent to its internal surface. The external ring was very small."

It would seem to me that to have a real traumatic hernia we should have one of two things: (1) Direct violence at point of hernia causing such severe injury to abdominal wall as to produce hernia at once or in a few days. (2) Indirect violence causing enormous increase in intra-abdominal pressure, far out of all proportion to the lifting, straining, etc., of ordinary labor. Example of such violence may be: Falls from a great height; heavy body such as a log, horse or large piece of steel falling across abdomen; enormous, sudden, unexpected strain, as when six men held a heavy piece of machinery and all let go but one, throwing all the weight of the falling piece on the one man. (In this case, one of the writer's, a hernia immediately appeared with great pain and tenderness. Patient was confined to bed one week, with ice bag applied. Operation performed in two weeks by Dr. Sherman revealed a well-formed sac. In my opinion this must have been a preformed sac. Yet this does not change the traumatic character of the hernia.)

From a medicolegal standpoint I would differ with the second condition of Bilfinger above quoted and agree with Coley quoted in the paragraph which follows: That is, that the presence of congenital defect in traumatic hernia is immaterial.

None of us is built like the "Wonderful One Hoss Shay." In every abdominal wall there is some weakest spot, and when sufficient violence is applied, the semifluid contents will find it, and either make a hole or enlarge an old one.

If there is a probability that the congenital defect was not sufficient to cause a hernia in the patient's ordinary business it would seem to me all traumatic hernia as described above should be compensable, and when preexisting hernia, either real or potential is offered as a defense the burden of proof should rest with the employer; hence, the necessity of careful examinations with accurate records at time of employment. Authentic records of (1) preexisting hernia, or (2) very open distensible rings with weakened aponeuroses should be sufficient defense.

In my opinion all other hernias not included in above definition occurring in an employee while at his ordinary work should not be compensable with the exception of some borderline cases described later. That a hernia is first seen after an accident or a heavy lift does not prove that the accident caused the hernia. It in all probability either "discovered" it to the patient (if honest) or, worse (if dishonest), furnished him with an opportunity to do a clever bit of malingering and sell an old hernia to his employer. In all hernias following accidents where the violence is not sufficient to cause a hernia in the average man with normal rings, stories by the patient of a sudden appearance of hernia should always be taken with a grain of salt and the burden of proof should be with him.

I believe that the wrong idea of traumatic hernia, promulgated by the English surgeons and English courts of the nineteenth century and continued by our own courts and compensation boards, has been productive of much injustice to employers of labor. A rigid application of above principles would probably rule out 95 per cent. of cases now allowed compensation.

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[1] Arch. f. klin. Chir., 1901, Vol. LXIV, No. 1.
[2] Int. Jour. Surg., Feb., 1904.

The "opinion" by Commissioner Leech in case of Dr. Smith vs. Pittsburgh Coal Company (pp. 63 to 70, Penna. Workmen's Compensation Board Decisions, Jan. 1, 1916, to Dec. 31, 1916), well illustrates the attitude of the Compensation Boards of the various states toward cases of hernia "occurring" while claimant is at work.

The "opinion" sweeps aside the "medical criticism" as urged from such authorities as Coley and DaCosta and the board accepts as the better authority the decisions of the English Court of Appeals, and the Illinois, Wisconsin and Michigan Boards and rules that "where a strain causes protrusion of the bowels it is a compensable injury, even though the protrusion is at a point weakened by congenital malformation or pre-existing hernia."

Commissioner Leech's opinion above quoted is an able one, and is well backed up by legal decisions, both English and American. California, Washington and West Virginia "deny compensation where a strain brings on protrusion of bowels through an old hernia."

There is no hope of any change of attitude of our courts and compensation boards till a united medical profession declares what hernia really is and convinces our legal brethren of the righteousness of our cause.

SUDDEN HERNIA

A group intermediate between the traumatic and the ordinary variety may be designated as "sudden hernias." The great majority of hernias are of slow formation, the gradual dilatation by mesentery of a "preformed sac." But sometimes when this sac is dilated almost enough to admit a knuckle of gut there occurs some unusual strain, not sufficient to bring it under the head of traumatic hernia, but enough to force the gut for the first time into a sac that is a tight fit. The stretching of the sensitive peritoneum at the ring, the pulling on the mesentery still unstretched and unusued to such violence, the pressure of the filled sac on delicate nerves of the part, all combine to cause pain, tenderness, nausea, and inability to continue at work.

These are borderline cases which often follow a real accident, often become strangulated and require immediate operation, and usually appeal to compensation board or jury as ones that should be compensated.

The writer cannot lay down any hard and fast rule for their settlement. Each case must be adjusted on its own merits.

It will probably be a long time before the question of right and wrong in these cases is decided. They have two causes — the pre-existing defect and the exciting cause that brings out the hernia. Upon the relative importance of each of these as a causative factor must depend the decision.

There is a growing disposition among employers of labor, especially large corporations, to operate on all cases of hernia occurring in their employ, paying expense of operation and compensating for time lost, this regardless of the medicolegal aspects of the case. This is very commendable and no doubt brings returns in gratitude, faithful and continuous service and removal of the employers' risk in an employee with a hernia.

However, the custom is not without its risks I have known three hernia cases operated on recently by large corporations: one was followed by dementia, one by rapid tuberculosis and death, and one by appendicitis and death. I have grave doubts about the hernia or the operation for its cure having been the cause of any of these conditions. Yet one case (the appendicitis one) got an award of death benefits, and the other two are still pending before compensation boards.

The force which produces traumatic hernia is tremendous, far beyond the ordinary strains of labor. The force causing sudden hernia, while still greater than that arising from the duties of the man's work, is only great enough to cause a moderate increase in intra-abdominal pressure.

In traumatic hernia, congenital defect is not an important factor. There may or may not be a preformed sac or an open external ring. This fact as Coley so well says, is immaterial. The force is sufficient to cause a hernia in a man who did not have this defect. In sudden hernia the congenital defect is by far the most important factor. A hernia would have formed sooner or later anyway. The causing accident only hastened it, and brought out the gut before the sac was quite ready for it.

In the borderline cases (which I believe compensable) the two factors are more nearly equal. Traumatic hernia is plainly compensable to the ordinary lay mind. (See Fig. 1.)

The question of compensation in sudden hernia is debatable even to the skilled surgeon or learned judge. The remaining hernias that are brought to our notice by employees fall naturally into three groups:

1. Those which are known old hernias; appearing before the man was employed by

our company. They are revealed either by examination at time of employment or by the man's truthful statement when he comes to us.

2. The man who comes to the work's surgeon stating that he has had an accident and for the first time a lump has appeared in his groin. On examination there is what is plainly an old hernia with a large sac; operation will always confirm this diagnosis. The man here was wilfully lying, was trying to "sell" his hernia to his employer.

3. The hernia in which the man comes to us with the same story except that he is telling the truth as he sees it. He did notice a lump in the groin for the first time. But it is not a new hernia, the lump had become so large that he discovered it. He had a preformed sac, dilating gradually for months and years and at last becoming large enough to contain a knuckle of gut. It does it quite easily, without pain, tenderness or shock. There may be slight nausea which is probably mainly psychic.

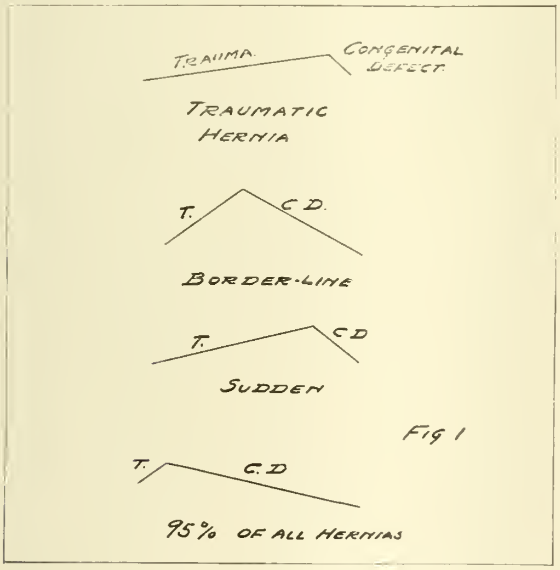

Fig 1

This hernia appears from causes which are "natural" or at least congenital, and bear no relation to occupation except that the strain of labor may hasten its formation. There has been no "accident," no violence, and the hernia has appeared during the everyday duties of his chosen work and partly in consequence of them. In a certain sense it might be called an "occupational disease" unpreventable by any safeguard that may be used by the employer. It would seem to me that these facts should relieve the employer of any legal responsibility for the hernia as such.

The danger of a preexisting hernia becoming strangulated, incarcerated or inflamed while its owner is about his duties, with the attending liability to pecuniary loss therefore on the part of employer is not within the scope of this paper.

Whether, under our existing compensation laws it is safe to employ a man with a hernia would depend on many factors: how badly we need the man; the condition of his hernia, and his ability and willingness to wear a well-fitting truss. When possible I think it better to have him operated on first and then hire him.

As to the advisability of hiring a man with an open ring: The congenitally open external ring with firm muscular and aponeurotic structures protecting the inguinal region gives us very little risk. I have never seen a hernia develop in one and I believe the chances of one forming are very remote. On the other hand, if we do not wish to employ men with hernias, we had best reject all the acquired open rings, especially if both rings are patulous and the surrounding tissues lax.

EXAMINATION OF APPLICANTS

About three and one half years ago the Carnegie Steel Company began examination of employees. We began by examining all men then at work and continued to examine all applicants.

I use a room well lighted with electric light, warmed and ventilated. There are scales, examining table, screen, cards for eye tests, special lamp and worsteds for color tests, etc.

Results of examinations are written on cards and filed. Special attention is paid to open rings and hernia. I use inspection with and without coughing, direct application of fingers to external ring and surrounding area, and the little finger invaginating the scrotal skin and extended through external ring and as far as possible into inguinal canal — this with and without coughing. In doubtful cases the applicant is made to lift a heavy table and cough while I hold finger over the ring. On inspection one notes when we have him cough the presence or absence of bulging, its location and size and the rapidity with which it disappears. One also notes whether there is the atrophy and discoloration caused by truss wearing. In a good light, most hernias reveal themselves on inspection if we carefully compare the two sides.

The examining finger notes the external ring, its size, distensibility and the condition of the surrounding tissues. On entering the canal we note whether its walls are firm or lax. We have the patient cough and will find one of several conditions:

1. Tightening of the canal on the finger in the normal type.

2. In the type of distensible external ring we usually find the same condition in the canal, with little tightening on coughing.

3. If there is weakness of the transversalis fascia in the "undefended triangle" of Blake, we can easily make out on coughing a distinct bulging of the posterior wall of canal. (See Fig. 2.) It is probably these cases that later develop a direct hernia.

4. We may make out a hernia which comes out only on coughing and goes away. If it is of any size we have already seen the bulging and now verify it with the finger. In a few cases I have been able to detect a hernia so small that it showed no bulging on coughing, other than the general bulging all men have, but far up in the canal on hard coughing a little rounded object comes down no larger than a pigeon's egg and immediately goes back. (See Fig. 3.) Based on the bulging, the size of the external ring, its distensibility, and the size and laxity of walls of canal, I have roughly divided my open rings into three degrees, first, second and third, and these are carefully recorded at time of examination.

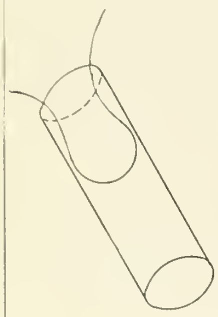

Fig. 2

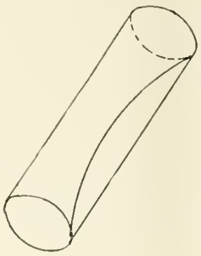

Fig. 3

There are some cases where, although no hernia will come out even on lifting table and coughing, the opening is so large and seems to extend so directly into the abdominal cavity and where walls are so lax, that I have recorded them as borderline cases. I am beginning to think that most of them are real hernias. These are found mainly among the presenile or acquired type. As to the internal ring, I have reached the conclusion that in the normal adult male I cannot find it with the examining finger. It is true where the walls are very thin we may trace the cord to where it enters the abdomen. I have never seen nor felt what I could identify as an open internal ring except in the borderline cases above described or where a hernia exists.

I believe that a hernia, to be compensable must have been caused by external, violent and accidental means; that there must have been some definite relation between the accident and the hernia. The essence of traumatic hernia (excepting those cases of direct violence) is an enormous sudden increase in intra-abdominal pressure.

The more moderate cases of traumatic hernia become the more severe cases of sudden hernia. There is no hard and fast line between them. It is these borderline cases that are compensable, where compensation boards and courts must decide each case on its own merits. It might be answered that every case must be decided on its own merits. While we must admit this, there are certain cases such as the traumatic hernias that seem to fall within well-defined rules and where the facts are apparent and leave no doubt in minds of board or jury as to the right decision. But in these borderline cases it is hard to get at the facts. The opportunities here are great for the patient to work off an old hernia on his employer; to pretend great pain and tenderness; to declare his inability to walk or work, and to make his claim that the so-called accident has caused his hernia.

To rule out these cases and to compensate the real borderline cases must tax the skill of courts and boards.

With the minds and beliefs of the surgeons of today in such a state of chaos as I have found them in these questionnaires; with such widely diverging opinions among surgeons as to the causes of hernia; as to what traumatic hernia really is; as to whether an open ring is a potential hernia; as to what congenital defects predispose to hernia; as to what kinds of accidents will cause a hernia, and to what extent trauma is a factor in causing a hernia; when a surgeon gets on the witness stand and swears to one fact or opinion about a hernia and another surgeon in the same case gives testimony directly opposite; with all this confusion among surgeons themselves, how are courts and compensation boards going to dispense justice?

Much has been said by Hopkins of Chicago and others about the great frequency of hernia among the laborers of southern Europe—Italy, Greece, Turkey and the Balkan states. Probably if we kept a careful record of these cases and noted the age and general physical condition we would find that among the young healthy men the proportion of hernias is not materially greater than that of other laborers. But when one of these laborers reaches 40 or 45 he becomes prematurely old, and it is these that in my series raised the proportion.

The other day I examined eighteen Greeks over 35 years old. There were three hernias, eight open rings and seven men with normal inguinal regions. The eight cases of open rings were the typical open rings of presenility, large, distensible with whole surrounding region feeling weak to examining finger. No doubt some of them were real hernias which I failed to get out, and the others were potential hernias.

Another group of laborers having frequent hernias are the mountaineers of Kentucky, Virginia, West Virginia and Tennessee. Here I believe degeneracy to be the cause with congenital defect in funicular canal or other structure about inguinal region. The hernia occurs in young men.

The question of age as a cause of inguinal hernia is a very interesting one and a chart from Berger's masterly paper, read in the French Congress of Surgeons in 1895, gives us the analysis of 10,000 cases. The chart shows those cases of inguinal hernia occurring in males by periods of five years for the different ages. (See Fig. 4.)

It will be noted that the curve begins high and shows the hernias due almost entirely to an unclosed funicular canal, increasing rapidly to five years of age where it is about 75 per thousand. Then there is a rapid fall right during the most active period of childhood, 5 to 15 years, although the child climbs trees, skates, plays baseball, jumps and does those things usually regarded as an exciting cause of hernia. The curve falls for the same reason the measles curve falls; those susceptible have had them. Those children with open canals have already developed hernia. The fall continues to the age of 30 years, where it shows only 7 per thousand. This is the lowest point in the congenital type of hernias. Here we have a beginning rise from development of the acquired forms, and possibly the influence of occupation.

It seems to me that occupation acts as a cause, not so much in increasing intra-abdominal pressure (the compensatory increase in abdominal wall will take care of that), but hard labor plus excesses in drink, plus poor food, plus bad hygienic homes and mills, gives undernourishment and consequent weakening of abdominal walls. This with heredity, and such diseases as tuberculosis and syphilis brings on a condition which I have called presenility. The condition is described by Sir Astley Cooper in his work in 1807, who regarded it as important. This rise then from ages 30 to 55 we may call the upward curve of presenility. Here we find most of the numerous hernias of southern Europe. Here at 35 per thousand at the age of 55 it stops rising, partly because here the laborer stops working so hard, but mostly because the presenile fellows are now rapidly dying off. Dead men do not get hernia. The other men whose abdominal walls have not yet begun to show senile changes have not begun to get the hernias of senility. They begin at about age 60 as you will note and here we have the upward curve of real senility rising at 32 per thousand at age 70, continuing to 75 at about the same. Then the lessened activity of old age begins to show. The old fellow walks with a cane and very carefully. He instinctively avoids anything causing a rise in intra-abdominal pressure; hence, the rapid fall from 32 at 75 to 8 at the age of 85.

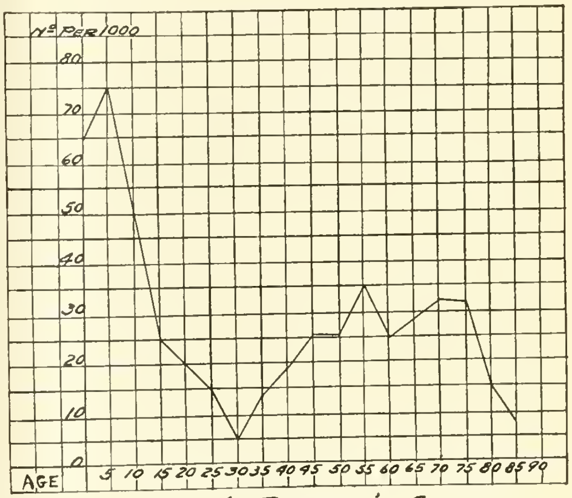

FIG. 4 BERGER'S CHART.

I have gone into the question so much at length on account of its extremely important bearing on the question at hand.

Most of our mill and factory employees are between the ages of 15 and 50. It includes the downward part of the curve from 15 to 30 when congenital defect is the predominating factor; where occupation has little to do with it and trauma rarely. Here the significance of an open external ring grows rapidly less to the age of 30 when I think we may disregard it, if the walls are still strong. If he were going to get hernia from this open ring he would have done so long ago. Here as elsewhere if both rings are open, he has a hernia real or potential, probably the former.

If we were to now continue this downward curve, including only those hernias mainly due to congenital defect, it would go rapidly downward, soon reaching zero. Somewhere in the early twenties we would start the tuberculosis curve. I have one case showing hydrocele at 25, hernia at 27, with death in six months after appearance of hernia from pulmonary tuberculosis. A little later the tertiary and hereditary syphilis curve begins and this with other diseases and conditions incident to dissipation, overwork, bad sanitation, etc., keep up the curve to 40, where the real presenility begins to get strong as a factor in our southern European, and so it keeps going up. Let us emphasize the fact that most cases occurring after 30 are acquired, without congenital defect or with it only as an unimportant factor. Here open rings are only a part of a general weakness of walls and usually a visceroptosis with its long mesentery and these conditions mean hernia now or soon. Direct inguinal hernias are of course not caused by open funicular canals. According to Coley they are "due to a weakness of structures which surround the external ring," while Blake would ascribe them to a weakness in the transversalis fascia in a triangular space bounded above by the fibers of the internal oblique, internally by the rectus and below by Poupart's ligament. He calls it the "undefended space."

Coley gives one direct hernia to forty-eight indirect in his report of over 2,000 cases operated on. I do not know what relation the open external ring may have to direct hernia, although I should think it would act as a predisposing cause.

This paper is not an attempt to settle any of the important questions relating to hernia. It only calls attention to their great importance from a medicolegal and an economic standpoint; the fact that we do not know as much about hernia as we thought we did; that some things regarded as facts are either untrue or only partly true.

The passage of compensation laws in various states compelled examination of employees. This caused a great awakening on the subject of hernia. Surgeons are being aroused to grasp the great opportunity now afforded them to study this subject on the living subject in the great wealth of material afforded in these examinations of employees. The answers to my questionnaire probably covered the results of half a million examinations. But these answers disclosed one fact much to be deplored: the majority of industrial surgeons are not going into this subject in the true spirit of the investigator.

We owe it to the employers of labor, to the men working in our mills and factories, to our courts and compensation boards, and to ourselves as honest, earnest seekers after truth to approach this question with an open mind; to be ready to throw aside any "hernia creed" as now taught whenever it does not tally with the results of our own observations. Let every man having the opportunity begin to record all open rings and then follow up by looking up the open ring record of every case which afterward develops a hernia.

Let some men who have a chance to observe a large number of cadavers make a series of observations on what percentage of these have a long enough mesentery to allow the bowel to protrude through an inguinal ring. It will be interesting and extremely useful to know how nearly this percentage coincides with the percentage of hernias found among men.

In March, 1918, 250 questionnaires were sent out to men presumably interested in hernia in the industries. About 150 answers were received; of these, about 50 did not attempt answers from lack of opportunity to examine employees.

The 100 questionnaires cover probably 500,000 examinations. Very few had attempted to trace hernias occurring after examinations to see whether they had open rings at time of examination (question 8), although this was to me the most important question.

I give below list of questions used with brief summary of answers received, then follows questions again with such answers as I would give today.

1. Do you make regular examinations of applicants for employment? About 20 per cent. do.

2. Are employees reexamined? How often? Very few did this.

3. Do you examine for hernia? Twenty per cent. For open inguinal ring? Twenty per cent. Are

records kept of open rings? Most all do who make examinations. No such records are kept in the U. S. Army examinations.

4. By the term "open ring" do you mean open internal ring, open external ring, or both? To which one do you attach most importance as a predisposing cause of hernia? Most all said both rings. About equally divided as to opinion of their relative importance.

5. Can you give (a) Total number of men examined? Only a few gave this. (b) Total number open rings found? In those who did, it was about 10 per cent. of men examined. (c) Total number of hernias found? In those who did, it was about 2 per cent. of men examined.

6. What opportunities have you to follow up these cases to see which ones develop hernia later? Few have had much opportunity.

7. How many of your examined cases have since developed hernia? Few answers.

8. How many of these are recorded as having had open rings at time of first examination? Few answers.

9. How many cases of so-called open rings have you seen afterward develop into hernia? Few answers.

10. Do you believe (from your own personal observation) that every open ring is a potential hernia? About 20 per cent. answered "Yes."

11. Have you seen cases with inner ring very patulous that went for years without developing a hernia? If so what reason do you assign for these cases not developing a hernia? This question worded wrong, should have read "external" ring. Most answers were "No."

12. How many cases have you seen of so-called "traumatic hernia," viscera coming out through a fresh tear? Most answers were "None," two or three cases were reported.

13. Do you believe that the average hernia as developing in our industrial employees is caused by the lifting, straining, etc., of work? Most answers were "No." Some qualified this answer.

14. What proportion of hernias you have met with, developing while at work, among employees, should, in your opinion, have been compensated by employers, from a standpoint of real justice to both? Some said "None." Some said only one or two. Many said about 5 per cent.

15. Do you believe that every hernia (or nearly every one) is primarily due to congenital defect, and that the ordinary strain of labor will not develop a hernia in one who has not this defect? Ninety per cent. answered "Yes." Some qualified their answers.

16. If "Yes," how can we detect this defect at time of examination? Most said "Do not know." Some said "By careful examination of rings, muscles, fascia, etc."

QUESTIONNAIRE AS ANSWERED BY THE WRITER

1. Do you make regular examinations of applicants for employment? Yes.

2. Are employees reexamined? Only when sick or injured.

3. Do you examine for hernia? Yes. For open inguinal rings? Yes. Are records kept of open rings? Yes.

4. By the term "open ring" do you mean open internal ring, open external ring, or both? To which one do you attach most importance as a predisposing cause of hernia? As a rule only external ring is meant. When the internal ring can be found, is open and admits the finger it is a borderline case between open rings and hernia, or true hernia.

5. Can you give (a) Total number of men examined? Nine thousand. (b) Total number of open rings found? Seven hundred and eighty-four, or one-eleventh of cases examined. (c) Total number hernias found? One hundred and fifty-three, or one-sixtieth of cases examined.

6. What opportunities have you to follow up these cases to see which ones develop hernia later? Only when employees come later with hernia.

7. How many of your examined cases have since developed hernia? Twenty-four.

8. How many of these are recorded as having had open rings at time of first examination? Three, one hydrocele, one borderline, one very open ring.

9. How many cases of so-called open rings have you seen afterward develop a hernia? Three.

10. Do you believe (from your own personal observation) that every open ring is a potential hernia? No, only where both rings are open and walls lax, mainly found in the presenile or acquired type.

11. Have you seen cases with external ring very patulous that went on for years without developing a hernia? Yes. If so, what reason do you assign for these cases not developing a hernia? Short mesentery, firm muscles and aponeuroses in inguinal region.

12. How many cases have you seen of so-called "traumatic hernia," viscera coming out through a fresh tear? Two borderline between traumatic and sudden.

13. Do you believe that the average hernia as developing in our industrial employees is caused by the lifting, straining, etc., of work? No. It may hasten a hernia caused by a weak spot.

14. What proportion of hernias you have met with, developing while at work, among employees should, in your opinion, have been compensated by employers, from a standpoint of real justice to both? About 5 per cent. The traumatic and severe sudden hernias.

15. Do you believe that every hernia (or nearly every one) is primarily due to congenital defect, and that the ordinary strain of labor will not develop a hernia in one who has not this defect? No. Some are due to congenital, some to acquired weakness of belly walls. Ordinary strain may hasten the formation of hernia in one having such a defect. I believe that nine-tenths of all hernias "occurring" after the age of 30 among industrial workers are caused by acquired (presenile) weakness of belly walls. Occupation is here negligible as a factor.

16. If "Yes," how can we detect this defect at time of examination? By examining the inguinal space of stripped applicant. We cannot detect the preformed sac nor a long mesentery. We can detect open rings and lax abdominal walls.

The writer takes this opportunity to thank Major Garrison and his assistants of the Surgeon-General's Library for their kind interest and help in searching the literature; also Dr. W. W. Keen for kind personal letters; also the one hundred surgeons who took the time from their arduous duties to answer my questionnaire. Without the help of all these this paper would have been impossible.

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3. Coley in Keen's Surgery.
4. Blake in Stedman's Cyclopedia.
5. Sheen in British Surgical Journal.
6. Coley in International Journal Surgery. (Three articles at various dates.)
7. Hopkins: Traumatic Hernia.
8. Kingdon's (London) Tables.
9. Berger: Paper read in Paris, 1895. (Ten thousand cases analyzed.)
10. Bernett: Holmes' Surgery, Edition, 1874.
11. Garrison's History of Medicine.
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13. Sir Astley Cooper: Atlas, 1804—Atlas, 1807.
14. DeGarmo: Hernia.
15. Geriatrics: Nascher.

Dr. Patterson: The discussion on this important subject will be opened by Dr. Charles A. Lauffer, medical director of the Westinghouse Electric and Manufacturing Company, East Pittsburgh, who needs no formal introduction to this audience.

DISCUSSION

Dr. Charles A. Lauffer, Westinghouse Electric and Manufacturing Company, East Pittsburgh: Approximately 92 per cent. of all hernias encountered in the industries are of the oblique inguinal type; next in frequency are the direct inguinal hernias. The umbilical hernias are still less common, and the femoral are rare. Hernia may be regarded as the most common frailty of the American working man.

A hernia is a protrusion. When its retaining wall gives way, the protrusion of an organ, or part of an organ, constitutes a hernia. Hernia of brain, lungs, stomach, etc., may be encountered, as well as hernia of the intestines. It is with intestinal hernia, that we are now concerned.

There are recognized "hernial zones," in which the anatomical defects exist, which give origin to hernia. Why does a hernia develop? Why is there a protrusion of abdominal contents through the abdominal walls (a) in the groins, (b) at the umbilicus, or (c) along the femoral canals? It is because of these "hernial zones" that the examining surgeons investigate the groins, the umbilicus, the femoral areas, exclusively, in looking for hernias.

The testicles in their descent draw out funnel-shaped extensions of the peritoneum, which line the abdominal cavity; this protrusion of peritoneum, known as the processus vaginalis, often remains open; consequently, the descent of the testicles makes permanently "weak places" in the abdominal wall. For this reason, the oblique inguinal, which follows the course taken by the testicle in its descent, is the commonest type of hernia. Hence, the examining surgeons give special attention to the groins.

Wherever arteries leave the abdomen, there exist perivascular spaces; with lines of cleavage thus established, the dimple of peritoneum, where the artery emerges, may deepen. A protrusion of peritoneum, forming the sac for the hernia about to be, may thus occur along the perivascular spaces; following the artery of the spermatic cord, following the femoral artery, the obturator artery, or the obliterated umbilical artery.

Anatomically considered, a hernia may arise slowly, owing to weak fascial support about hernial orifices, but is frequently due to latent developmental defects, such as a patulous processus vaginalis. Nature is not a perfect architect, else this diverticulum of peritoneum would be completely obliterated; the preformed sac is an embryonal remnant.

The hernial sac may exist for years, unoccupied; the patient with this latent defect is foreordained to develop a hernia. The empty hernial sac invites an occupant. Until the occupant arrives, the empty, unfilled sac is unknown to the patient, and cannot be definitely diagnosed by the surgeon. The psychological moment arrives, the tenant enters; "the hernial contents are occupants of a previously untenanted room," as expressed by Dr. J. J. Moorhead.

If the preformed sac becomes suddenly filled for the first time with solid contents, while the patient is at work, the sudden stretching of the preformed sac will sometimes cause local pain and tenderness. Nausea is rarely a symptom, and immediate disability infrequently occurs. When such acute symptoms develop, it is evident that the hernial contents have distended and over-filled the preformed sac.

Most hernias come gradually, however, and cause no immediate disability; the first sign of hernia is often the mass the patient sees in his groin. In other cases it comes quite unobserved, as many patients do not report until the mass is scrotal in extent.

Every complete hernia has two parts: (a) the sac, and (b) the contents. The essential part of a hernia is the sac, which is a protrusion of the peritoneum, lining the body cavity.

No single expulsive force will produce a sac. The peritoneum is a tough resistant membrane, and cannot be shoved suddenly out to form a hernial sac. Consequently, no single act of traumatism forms the sac.

The sac of the (1) developmental hernia exists as an embryonal remnant; the sac of the (2) acquired hernia is a pouching out of the peritoneum, slowly acquired, being months and years in its development.

When the sac has been developed, any sudden increase in the intra-abdominal pressure, as sudden violent sneezing, may shove solid contents into the sac. If a hernia already exists, or is latent, hard work contributes to the rapidity of the hernia's growth; it is, however, the several anatomical defects that are the determining factors in the causation of the hernia. Continued coughing, as in chronic bronchitis and asthma; straining at stool; urethral stricture; and prostatic hypertrophy are acknowledged factors in producing hernia. A man's occupation is thus but one of many factors, which jointly contribute to the causation of his hernia.

Some history of injury is the alleged cause of most every hernia, especially since the present compensation law has gone into effect; hard manual labor (lifting, pulling, and pushing), while sometimes the apparent cause of the hernia, does not actually produce hernia, nor contribute thereto, except in predisposed persons. Hard labor strengthens the abdominal walls hence the muscular manual worker is less afflicted with hernia than the ill-nourished office worker of sedentary habits. Anatomical defects in the (a) peritoneum, (b) fasciae, and (c) muscles of the inguinal area, likewise of the other hernial zones, predetermine hernias, rather than the man's occupation. He gets it because he has it; his hernia is first latent, then it is incipient, and finally it is manifest.

Physical examination often discovers a hernia of which the patient is not aware; or reveals a tendency to hernia, disclosing a patulous inguinal canal, admitting one or more fingers; and a relaxed internal ring, which gives a marked impulse on forced coughing.

In examining for oblique inguinal hernia, the scrotum is inverted, and the palpating finger is introduced along the course of the cord, through the external ring, and towards the internal ring. A moderate impulse felt by the palpating finger at the internal ring indicates relaxed fascial support; a more marked impulse indicates that the sac of a latent hernia fills with water, or solid contents, the impact of which produces the impulse. The water (peritoneal fluid) serves as a hydrostatic dilator of the hernial sac; but the increase in the size of the hernial sac is more rapid after the sac has acquired solid contents; an accurate diagnosis is then more readily achieved.

Patients may have tight external rings and have simultaneously relaxed internal rings; in such instances, palpation must be through the abdominal wall, as in the case of direct inguinal hernia, and no assistance in arriving at a correct diagnosis is obtained by palpating along the course of the cord. When thick subcutaneous tissues are superimposed over a relaxed internal ring, the external ring being tight, the patient may have a potential hernia that the examining surgeon fails to detect.

G. was operated on by a reputable surgeon for left oblique inguinal hernia; he was informed that he had no hernia on his right side. He worked half a day after returning from the hospital, then developed a mass on his right side, which I operated on within the past month. At operation there was a large, thick hernial sac, with many adhesions. The sac had been there from birth; these congenital defects are usually bilateral, and it is generally a safe practice to operate on both sides, when a hernia is manifest on one side.

A boy of 8 months was admitted March 3, 1918, to the Braddock General Hospital, for a herniotomy. The surgeon, on whose service the child came, could not determine on which side to operate, as the inguinal canals were wide open on both sides, but no contents came into the hernial sac. The attending physician had worked an hour to reduce the hernia, but he could not recall which side it had appeared on. When the hernial sac remains empty, the palpating finger of the examining surgeon cannot tell with any degree of assurance that the sac exists.

A letter somewhere in my possession declares that a certain patient was paid three times for a right oblique inguinal hernia, by three different firms, under the compensation law of New York state. That is a possibility, unless the radical cure by surgical operation is resorted to, when the hernia first develops.

A patient of mine operated on, March 28, 1918, further illustrates that failure to diagnose an existing hernia is readily possible, because the hernial sac must have contents to make its presence manifest to the examining surgeon. It thus arises that patients are occasionally diagnosed by one surgeon as having hernia, who, on reexamination by the same doctor or by some other surgeon, present no hernia. This patient had a large double hernia, almost scrotal in extent, when I examined him in the shop; after the patient had ceased from labor and rested in bed, he was examined by my colleague in the hospital, who declared that patient had a small hernia right, no hernia left. On operation we found large hernial sacs on both sides, thick and adherent; sacs were of the congenital type.

On another occasion, I sent in a man for a herniotomy; I had seen the hernia down, while the man was at work. My colleague declared he could locate no hernia; neither could I, after the man had rested. Operation revealed a big sac, thick and adherent.

Many of our new employees develop hernia within two months of their employment; approximately 14 per cent. of the applicants for employment have open rings; 3 per cent. have hernia. Employees with patulous inguinal canals we consider more liable to develop hernia, but the rings may be very open, and no hernia arise; the pathological entity that gives rise to hernia is the preexisting sac, which the palpating finger can detect with certainty only when the sac fills with liquid or solid contents.

As the empty hernial sac can thus escape detection, the situation forces the logical conclusion that the ultimate accurate diagnosis of hernia depends on the surgical dissection of the structures involved.

It is debatable, whether a latent hernial sac might not have remained empty for an interval of several more years had the patient been differently employed. Yet the fact is patent that surgical intervention reveals the true nature of the alleged injury. If at the time of operation the sac is large, thick in whole or in part, presents adhesion without, or adhesions between the sac wall and contents, then the hernia is an old one. If the hernial sac is torn, and there are extravasations of blood, and other evidences of trauma, then the indications are that the case is traumatic. We contend that hernia is sickness on the grounds that the preexisting hernial sac is a pathological entity.

The operating surgeon should be the arbiter as to whether any given case is pathological or traumatic. Nobody but the operating surgeon is a competent witness in describing the findings in any given case.

We offer as a solution of the vexed hernia question, that the operating surgeons submit to the parties interested, the surgical diagnosis, based on the findings at operation, and that the decisions of referees be guided by the reports of surgeons, as to which cases of hernia are pathological, and which are traumatic.

Experiments on the cadaver, attempting to force the finger from within, demonstrate that no man's finger is strong enough to force its way into the internal ring; "one steady plunge of the finger will not enter the normal, closed ring," quoting Dr. H. J. Cronin.

Nature permits of the gradual stretching of the peritoneum, without tearing it. The acquired hernial sac is therefore slowly developed. Both types of preformed sacs, (a) the developmental and (b) the acquired, can remain latent for a long time before receiving enough solid contents to attract the attention of the patient. When a preformed sac becomes distended with solid contents, it merely leads to the discovery of the hernia. The empty sac was an unknown hernia; the filled sac is a known hernia.

In a *bona fide* traumatic hernia, the peritoneum is torn, and viscera come out through a fresh tear in the peritoneum; direct injury, inflicting violence to the physical structure of the body, may produce a traumatic hernia.

After extensive correspondence with surgeons the country over, while preparing my paper on hernia for the second Harrisburg Conference of Physicians, and again through my connection with the Hernia Committee of the National Safety Council, I am prepared to say that if physicians had this question to decide, hernia, as ordinarily encountered in the industries, would be classified as sickness.

Of the scores of letters received, bearing on "Hernia as an Anatomical Defect," I wish to quote from one. Dr. Charles H. Mayo says:

"I believe as you do, that there is an anatomical defect in the individual who develops inguinal hernia following straining or accident—that he has a congenital protrusion of the sac along the cord. A true traumatic hernia, if inguinal, is nearly as much of a local injury as if it were produced on the abdomen in other regions. It should be accompanied by such local evidence of its occurrence as would be expected from injury of the parts."—(*Monitor,* October, 1916, p. 4.)

When a hernia case is heard, the attorneys quibble over nonessential, irrelevant details; from the viewpoint of physicians and surgeons, such quibbling is a waste of valuable time. The very name popularly applied to a hernia prejudices the case; a hernia is a protrusion, a rupture is something torn. Rupture and hernia are antagonistic terms, not synonyms. The old anatomists, before the Chsiritan era, knew that much, hence the name hernia, meaning protrusion.

Copernicus died in 1473 at the age of 70 years. His theory placed the sun in the center, and reduced the earth to the humble position of one of the planets. Copernicus advanced his new theory four centuries ago, yet in the vernacular of every language "the sun rises and sets."

Popular ideas become so firmly fixed in the thought and literature, that they cannot be eradicated; popular ideas are very convenient, sometimes, so why combat them even when they are fallacious? People want to be told that they work too hard, or too long hours, that their work makes them sick, and they like to be told that hard work produces hernia.

It is not the physician's job to antagonize the follies, vices and the fallacies of the public; to mend and cure is our duty, while living at peace with our patients.

Hernia is but one of "the 57 varieties" of sickness, that may be considered by the patient as having arisen from an injury.

It requires less time for the company's surgeon to operate, and radically cure the hernia, than is consumed in legal quibbles over "who is responsible." How can the patient be responsible? He was unaware of the preexistence of the hernial sac, until the filling of that hernial sac with hernial contents occurred. The general public, and some lawyer, then convince the patient that "he must have sustained some injury of the nature of a strain," and that "in consequence of said strain he developed a hernia."

How can the employing company be responsible for anatomical defects that lead to hernia? As surgeons, we are concerned in the cure of the victims of hernias, and would rather operate than argue; and because we know that the patients need relief, and the employing companies require their services and their good will, we advise operation.

The frequent failure of trusses to retain hernias in reduction, as well as the adhesions often existing between the walls of the hernial sac and the hernial contents, makes the wearing of trusses uncomfortable and dangerous. Unless contra-indications exist, we urgently advise operating on all hernias.

We consider it a patriotic duty to perform herniotomies wherever required, thereby restoring workers to their greatest efficiency in industry, and simultaneously qualifying them for military service if called to the colors.

Our company for many years has not hesitated to defray hospital and surgical expenses for employees who have been many years in the service, and who are Relief members; our company has voluntarily accepted the employees' point of view, time and again, long before the Compensation Act became effective, Jan. 1, 1916. But for employers to be forced into performing herniotomies for relative strangers (for stragglers and floaters) is expecting too much, inasmuch as hernia is a form of "sickness."

Corporations pay state taxes; considerable liberality is displayed by this great commonwealth in its support of hospitals. It, neveretheless, appears that the state is expecting employers to provide medical service for employees that the hospitals, sustained by the commonwealth, should provide. The impecunious citizen should be cheerfully received in the hospitals sustained by the bounty of the commonwealth; hernias should be remedied, surgically, even if the state is required to take over certain of the hospitals, and employ surgeons on salary to accomplish this end.

Dr. Patterson: At the 1915 Session of the Legislature, there was passed a Workmen's Compensation Law, which went into effect on Jan. 1, 1916. Two years have elapsed since the law was placed on our statute books, and we have had two years' experience with this law. On Jan. 2, 1919, our Legislature will meet again; and it seems very appropriate that at this time the physicians of the commonwealth should get together and consider whether or not this law should be amended. With apologies to those who appear before him on the program, it is my intention to call first on Mr. Harry A. Mackey, Chairman, Workmen's Compensation Board, Pennsylvania Department of Labor and Industry, because he has a meeting that he must attend soon in the capitol. Mr. Mackey's paper is part of the symposium on "Does the Two Years' Experience with the Workmen's Compensation Law of Pennsylvania Demand Its Amendment, and If So, How?" He will treat the subject "From the Viewpoint of the Board."

DOES THE TWO YEARS' EXPERIENCE WITH THE WORKMEN'S COMPENSATION LAW OF PENNSYLVANIA DEMAND ITS AMENDMENT, AND IF SO, HOW?

FROM THE VIEWPOINT OF THE BOARD

HARRY A. MACKEY
Chairman, Workmen's Compensation Board, Pennsylvania Department of Labor and Industry
HARRISBURG

I have been asked to write a paper on my views as to any changes that should be made by the next legislature in the Pennsylvania Workmen's Compensation Act. It perhaps would seem paradoxical to suggest amendments to a law that, in a little over two years of its administration, has become such an important factor in social justice and has met with such cordial support from both employer and employees, and at the same time has not been subjected to a word of hostile criticism from any representative of the public press of the state.

It is a theme of daily comment that this law, born of a new thought, affecting the intimate relationship of 8,000,000 people, with provisions in derogation of the common law, should have aroused such universal enthusiasm and no unfriendly comment. To close observers, however, the result is not surprising. The act itself assembles the best considered provisions of all the laws on the subject of workmen's compensation that had already been enacted by our various states. It is the product of a sincere and honest effort on the part of those who proposed it and of all who were responsible for its passage to provide an easy and rational solution of the problems of injured employees.

At the time of its passage its benefits seemed to be reasonable and to furnish the employee with a guarantee against real want at a crucial period in his life; and yet not prohibitive of the financial success of the employer. It recognized the fact that the repair of the human machine is a legitimate charge against the cost of production that should ultimately be borne by the consumer or user of the product. The great success and popularity of this law is first due to its own rationale and the support it has received from the press and the courts, and finally to the conscientious effort of every one who has actively been identified in its administration to establish it as a vehicle for human justice and to make it the crowning glory of the administration that was responsible for its passage.

It would be vain, however, to suggest that this, or any other law, is perfect in all its provisions, for experience will justify the suggestion of certain changes that will render it more elastic in its provisions, more comprehensive in its terms, extend its field of usefulness and add to its opportunities for greater accomplishments.

At the conclusion of the first year's experience the Board was asked to express its views upon certain amendments that were then pending before the last legislature. At that time we proposed certain changes that affected procedure only. We assumed that it would be generally accepted that, having sat in judgment upon the act, having applied its various provisions to specific cases, having watched its operation in respect to over 200,000 industrial accidents during the year, and having interpreted its clauses in the light of the law, as we understood it, if there were any deficiencies in its provisions that limit the evident intention of the act, we would be the first to detect such shortcomings.

We then proposed certain amendments affecting procedure only. Since that time our courts of common pleas as well as of last resort have had opportunities to pass upon nearly every line of the act capable of more than one construction. Our law has, then, been well interpreted and all room for doubt as to its meaning has been removed.

I take advantage of this opportunity to pay my respects to the courts of Pennsylvania. They have entered into the spirit of the law and have interpreted it at all times so as to emphasize its humanitarian features. They have discarded technicalities, discounted the special pleader and breathed into every line of our act real justice for the injured man, and have thoroughly moulded public opinion in its favor. Without the slightest thought of criticism and with no unhappy experience in the administration of this law while we have been a bureau of a great department, still I believe, that because of the great magnitude of the business that we handle, the Workmen's Compensation Bureau should be created into a separate and distinct department of the state administration.

I am led into this belief, primarily, because the functions of the Board are judicial. Cases come before us on appeals from the referees. We consider only questions of law, and the importance of testimony. I do not believe that it makes for the greatest solidarity or finality of our decisions that the Workmen's Compensation Bureau should be a subdivision of a department whose duties are largely investigation and summary enforcement of regulations.

I am firm in this thought because I am fully convinced that health insurance is just as certain of adoption by the various states as were workmen's compensation laws. The one follows as a natural sequence of the other. State commissions are now studying the subject. A bill is pending before the New York Legislature which is the result of intensive study by the State Federation of Labor. Our state will not be content to lag behind in this legislation nor to follow in the wake of other states, as it did in workmen's compensation; and, therefore, I look to the early enactment of a health insurance law carrying cash, medical, maternity and funeral benefits; and when such a law is adopted its administration can well be referred to the Department of Workmen's Compensation.

As to the extension of privileges and benefits of our workmen's compensation law, appropriate legislation should be passed to extend them to the railroad employee and to the workman upon the farm. I regard these two suggestions of most timely importance. The first must be accomplished through the Congress of the United States. For two years I have been calling the attention of our lawmakers and the public to the manifest injustice done to the great body of railroad employees of the United States, because of the fact, that, under the exclusive control which Congress exercises over interstate commerce, the Employers' Liability Act of 1908 provides the only remedy an injured railroad employee has. The United States Court has recently ruled that this exclusive jurisdiction prevents a state extending its compensation law to this class of employees. Congress should either annul its act of 1908 or give a railroad employee the right to elect as to whether he will proceed under that act or the workmen's compensation law of his state.

As early as December, 1916, I addressed a communication to the Pennsylvania State Grange, when it met at the Academy of Music in Philadelphia, calling its attention to the fact that the exemption of farm laborers from a workmen's compensation law is political rather than scientific, and that the same privileges should be extended to a hired man on the farm, when injured, as to one injured while working in one of the industrial establishments of the state. It seems to me that at this particular time, when the integrity of the nation is so absolutely depending upon the products of the farm and since the question of furnishing the necessary help to the farmer has become a national problem, the farmer is holding out no flattering invitation to a workman when he seeks to induce him to remain on the farm and still withholds from him the common humanity that other industries extend to an injured workman.

Undoubtedly there will be proposed at the next legislature certain changes in this law, which I cannot discuss at this time; such as the method of computing wages, the elimination of dependency proof where an unmarried son or daughter living in the household is killed, compensation for disfigurement, for loss of members, compensation for dependent children beyond the present age limit, the reduction of the waiting period, the right of the injured man to select his own physician, a money settlement with widows who desire to remarry, the extension of the period of medical attention, an increase in the remuneration to physicians and surgeons, and an increase in the amount of compensation to injured workmen. When this last subject was before the last legislature we took the position that, while we felt justified in recommending certain changes in procedure, as to amendments touching cost we ought to remain neutral. The man who was to receive the benefits, of course, would be for increased compensation, while the man, who must pay, might feel that industry could not bear a further burden, and therefore we ought not to take sides. These observations were particularly true at that time in light of our then limited experience, and they obtain now to a very large degree; but conditions have so materially changed during the last twelve months, that I would not be sincere if I withheld a firmly fixed opinion that industry and the consuming public can now well afford to be more liberal to an injured employee.

We are urging upon our workmen the patriotism of industry. From every editorial room and every public platform the employees of Pennsylvania are urged to stick to their tasks. They are shown that the future of democracy and the integrity of our Nation depends upon the men on the farms, in the mines, mills and factories. The workmen know this to be true. Labor is patriotic. Our labor leaders know that it is poor patriotism at this time to take advantage of this situation and to endeavor to extract the last penny from industry when the product of labor is necessary for the very life of the army which is carrying our colors upon the fields of Flanders. No thought of remuneration enters the minds of those who have gone forward in the uniform of our country to give up their lives and shed their blood that human liberty shall survive. But, while we are thus urging this tenacity of purpose and greater effort upon our workmen, we must not forget that the cost of living has so advanced that when the workman shall have been injured in his intensive occupation that the compensation provided by our law, while perhaps fitting the time of the passage of the act, offers but a trifling pittance to sustain him and his family during his recovery.

Our attitude toward physicians' fees was exactly as toward increased compensation; now, however, for the consideration of the medical fraternity, I suggest a few thoughts, without expressing a definite opinion as to their value, but believe that they will lead to some just modification of the law.

1. That reasonable surgical, medical and hospital services, medicines and supplies as and

when needed, shall not be limited to the first fourteen days after the disability begins, but shall be furnished during the entire period of disability.

2. That a schedule of specific indemnities more extensive than that now embraced by the act be adopted. For example, the Act of 1915 allows 50 per cent. of the wages for 175 weeks for the loss of a hand. Let that be amplified so as to designate a specified number of weeks for the loss of each digit, the number of weeks allowed for each finger varying in proportion to its importance to the hand in industrial pursuits.

3. That a schedule of prices be charged for various operations so as to clarify somewhat the confusion existing in regard to the meaning and limitations of major and minor operations. For example, let this schedule specifically set forth the charge for an operation upon the fingers and hand, on the forearm, the arm and shoulder. Also for any operation on the foot and toes, the leg and thigh and similarly with the remaining anatomical divisions of the body as the abdomen, chest, neck and the head. And particularly should these designated charges obtain in respect to simple and compound fractures; for the charge for setting a simple uncomplicated fracture should be less than that for a compound fracture.

4. There is urgent need for the use of a schedule of specific charges in respect to injuries, disability from which would probably not exceed two or three weeks. Such cases are frequently attended to daily for the first fourteen days and the minimum charge of $25 charged. Moreover, there is a wide variability in the charges made for roentgen-ray plates and for electrical treatment and massaging, etc. The medical administration of the compensation law would be greatly facilitated by the use of a schedule of fixed prices according to the recommendations of committees of medical men appointed by the state medical society for that purpose.

During the last year our experience with physicians has thoroughly justified a prophesy I made in a paper before the Philadelphia County Medical Society on May 10, 1916, when I said: "At every appearance before a medical society I have urged patience, careful observation and thoughtful study of the effect of this law upon the profession. Physicians individually and medical societies have exercised the greatest degree of moderation in considering this subject. I believe that when we shall have enjoyed a full year's operation of this law and are ready to appear before the next legislature to recommend any amendments that our experience shall then have justified, that we will not have as many suggestions from the medical profession as it at first seemed that we would. I believe that physicians will realize the multiplied opportunities this law presents for their activities and appreciate the fact that it does not fix their fees, nor trespass upon the ethics of their great profession. It will only be, however, after the mature deliberation of societies such as this that the final judgment of the profession shall have been voiced."

DR. PATTERSON: I am sure that we are gratified to have the viewpoint of the Chairman of the Board. We will now have the subject from "The Viewpoint of the Physician," by Dr. Frederick L. VanSickle, president elect of the Medical Society of the State of Pennsylvania, Olyphant.

DOES THE TWO YEARS' EXPERIENCE WITH THE WORKMEN'S COMPENSATION LAW OF PENNSYLVANIA DEMAND ITS AMENDMENT, AND IF SO, HOW?

FROM THE VIEWPOINT OF THE PHYSICIAN

FREDERICK L. VAN SICKLE, M.D.
President-elect, Medical Society of the State of Pennsylvania
OLYPHANT

I am very glad that Mr. Mackey had the opportunity to open this discussion, and I feel that he has broken the ice very well. All I have done is to add my account to the paper of Dr. Estes published last February, and so bring the matter up to date from the experience of the physicians who have been in the field.

First I desire to place on record my thanks for the very kind cooperation of the many physicians who have promptly answered my questionnaire relative to their experience and recommendations as to any amendments or alterations, which in their estimation should be made to the Workmen's Compensation Act of the State of Pennsylvania.

I wish also to thank the officials of the various hospitals from whom I have requested the answer as to their experience in caring for compensation cases and their recommendations as to alterations or amendments of the law.

It was from the answers to this questionnaire and from my own personal experience and observation, that the discussion which I am about to present this afternoon has been deduced. It is only fair to say that a single surgeon's experience in the working of this law could not be taken as sufficient evidence from which to gather material facts of so important a character as those which apply to an act relative to a great army of industrial workers of the State of Pennsylvania, as well as the great number of industrial physicians and surgeons who have been devoting much of their time to the treatment of accident cases coming to them and in sequence of which their recompense has been received by direction of the law.

It would be eminently desirable were it possible to obtain an answer to the questionnaire from every industrial physician in the state and were each to give his candid, unbiased opinion, the law-makers of the State of Pennsylvania could not but be impressed with the absolute certainty as to whether or not the law needs amendments.

In order that we may discuss the medical phase of the Compensation Act, passed at the 1915 session of the Legislature of the State of Pennsylvania, I ask your indulgence for a moment to the reading of Section 306, paragraph (e), which applies to the services of the industrial surgeon. I am aware of the fact that each of you can probably repeat this from memory, but yet it is well for us to be refreshed in mind when so important a subject is under discussion. Section 306, paragraph (e), above noted, reads as follows:

> "During the first fourteen days after disability begins the employer shall furnish reasonable surgical, medical and hospital services, medicines and supplies, as and when needed, unless the employee refuses to allow them to be furnished by the employer. The cost of such services, medicines and supplies shall not exceed $25, unless a major surgical operation shall be necessary; in which case the cost shall not exceed $75. If the employer shall on application made to him refuse to furnish such services, medicines and supplies, the employee may procure the same, and shall receive from the employer the reasonable cost thereof within the above limitations. If the employee shall refuse reasonable surgical, medical and hospital services, medicines and supplies, tendered to him by his employer, he shall forfeit all right to compensation from any injury or any increase in his incapacity shown to have resulted from such refusal."

At the beginning of the operation of the Workmen's Compensation Act and during the first six months thereafter, of the year 1916, there was much confusion, misunderstanding and dissatisfaction, both on the part of the employee and the industrial surgeon, because much of the application of this Act was strange and new, and each was more or less suspicious as to the outcome in its application. The employee many times refused to accept the services of the employer's surgeon, being suspicious that the treatment would not be as satisfactory or as competent as that offered by his usual family physician.

The employer was uncertain as to the amount of expense which had been thrust upon him and, while willing enough to comply with the law, was anxious that the expense of same should be kept as low as possible, and when he placed the insurance with the various carriers his responsibility did not entirely cease and often a conflict of opinion arose as to the best method of construing the medical provision of the Act.

The industrial surgeons selected to care for the employees of an industry were uncertain as to the provisions of the Act relative to the major and minor operations and, as a whole, it has taken some time to bring about a clear atmosphere and a right understanding, so that it shall be plain and satisfactory to all parties concerned.

It was evident at the legislative session of 1917 that no mature judgment had been arrived at, relative to this particular section of the Workmen's Compensation Act, else the amendments which were proposed would have been accepted, and I feel that the entire weight of the opinion of the medical profession doing this work had not reached the proper ears or was not yet of such unitive opinion as to carry weight in the passage of such amendments.

The following questionnaire was sent to the various hospitals in industrial centers, to solicit an opinion as to their experience with industrial cases under the insurance feature of the Act:

> What has been your experience relative to the effect of the Workmen's Compensation Act upon your hospital, and what changes should be made in the act from the hospital standpoint? Should the Workmen's Compensation Act be changed to read that the hospital charges shall be separate from the charges made by the physicians and surgeons?

The following questionnaire was sent to every county in the state, to men doing compensation work; especially to those not employed upon a monthly or annual salary:

1. Are you satisfied with the present law as it applies to the surgeons under the Workmen's Compensation Law?
2. What amendments would you offer relative to the amount of compensation for minor and major operations?
3. Are the amounts of $25 and $75 sufficient? If not, what in your estimation would be sufficient?
4. Are you satisfied with the waiting period, namely, the treatment of the patient for fourteen days, or would you consider the time needed to be extended; and, if so, what length?

From the replies received from the various hospitals, I would say that the hospitals of the state are fairly well satisfied with their experience, inasmuch as they have been paid for at least fourteen days' care of the injured workers, while formerly a great percentage of these cases did not bring revenue to these institutions.

It is true that many cases exceeding the fourteen day period, remained in the hospitals and from these patients little if any remuneration was obtained. This condition of affairs has been the usual experience in the states having workmen's compensation acts and was expected on the part of the management of hospitals receiving such cases.

It is also a fact that the first party to be paid as a rule has been the hospital, inasmuch as the method of payment brings the hospital first and the usual rule of a hospital is that patients shall pay before leaving the institution, and then whatever is left after such payment goes to the industrial surgeon.

There have been several methods employed in different parts of the state relative to the hospital bills. Where the insurance is paid by a carrier, namely, a corporation insurance company, a separate bill is made for the time the employee has received treatment in the hospital. In other cases, the amount is paid to the industrial surgeon, he vouching for payment of the patient while in the institution.

Again the charges for hospitals differ very materially in different parts of the state and in different hospitals in the same locality; hence, one surgeon might receive more in a like case than another, owing to a smaller charge on the part of the hospital.

One physician stated that "the doctor has no right to collect anything if the patient after having received the treatment does not care to 'bother' about collecting the doctor's fee."

The type of case from the hospital standpoint increases the charge. In case of burns the extra expense of dressings and materials furnished in many hospitals is added to the per diem charge to the patient; hence, will be a charge upon the $25 allowed under the Act.

In cases of eye injuries, surgeons doing this particular branch of work contend that the 14-day period is too short, as sometimes these cases are obliged to stay in the hospital at least 21 days and therefore it is impossible to care for them under the minimum fee.

In hospital treatment of fractures there seems to be a difficulty when the law is correctly construed relative to the further attendance upon fracture cases after the 14 day period has elapsed.

It is true that most of these cases are turned over to the man serving on the staff, which again is difficult because it allows an opportunity for one to receive pay and the other to continue treatment without pay and wherever the responsibility is divided, ground is offered for disagreement as to faulty results.

It would seem also from the reports of surgeons in some sections of the state, that it is the custom to accept patients suffering from injuries and coming under the Workmen's Compensation Act as charity patients in the hospital and that these cases are cared for by the surgeon on the staff during that time. This method is objectionable, inasmuch as the man serving on the hospital staff may be ignorant of the fact that it is a compensation case and renders service without pay. It is also detrimental, for the reason that it does not allow the proper interpretation of the act, unless the employer or his insurance carrier are cognizant of the fact that such system is in operation; neither is it fair if it is operated in that way, as the compensation is not paid.

Perhaps there are only a few instances of this kind and we doubt that where hospitals are properly managed such conditions would be allowed. It would seem from our point of view that in the great percentage of cases requiring hospital care, when being treated by the surgeon, either selected by the corporation, individual employer, insurance carrier or the State Insurance Fund, that with a maximum fee of $25 for minor cases it is a very difficult problem to obtain a proper recompense to the surgeon, after the hospital has been paid, irrespective of the type of case or of the character of treatment; hence, it would seem most eminently proper that some method should be adopted whereby the hospital and the surgeon's bill may either be divided or that each shall render a separate account under the Compensation Act, and that in such instances the question of the amount for surgeon as well as the amount for hospital must be determined or else that it shall require an amendment, and where the hospital bill is included this amount must be increased.

We emphatically deny, from the experience of the past two years, that there has been any effort on the part of the surgeons of the State of Pennsylvania to make capital from the Workmen's Compensation Act and it is only just to the physicians of the State of Pennsylvania, who are doing this character of work on the basis of the Act and not under salary, that with the increased wage scale of workmen, the increased price of commodities, drugs, dressings, etc., that unless there is some method to increase compensation it is quite evident that a $25 and $75 maximum amount, with hospital bill included, will not be a fair compensation to the surgeon.

Let us now turn our attention to this questionnaire in regard to the surgeons and especially those who are not under salary, relative to their experience:

Question 1. "Are you satisfied with the present law as it relates to the surgeons under the Workmen's Compensation Act?"

Of the entire number of physicians responding 100 per cent. answered in the negative.

It is quite evident therefore there seems to be something lacking in the bill which would give satisfaction in the general field of industrial surgery. There have been suggestions made as follows and many of them are from a sane viewpoint:

It is contended that the fee should be for treatment in office, home and hospital, the same as prevail in each community in private practice.

It would also appear that many are dissatisfied and claim that the surgeon must be paid, whether he is serving on the staff of a hospital or as a surgeon in the service of the employer during care of the case.

The question of fee bill is attacked by many and it is contended that all the fee bills of the county societies of the State of Pennsylvania be averaged and a fair deduction made from the same, giving a fee bill which should be incorporated in the Act. It would then answer the contention of another that the actual services should be paid for as rendered.

There also seems to be a clamor regarding question 2:

"What amendments would you offer relative to the amount of compensation for minor and major operations? which also includes the third question:

"Are the amounts of $25 and $75 sufficient; if not, what in your estimation should be sufficient?"

Ninety per cent. of the answers received offer suggestions relative to an increase in both instances. These range from $25 to $75 for minor cases and $100 to $200 for major cases.

It would therefore seem that the tendency on the part of the surgeon doing this class of work is to place the fee where it would correspond to charges now made with increased high cost of living.

To be sure, there are some who urge that no limit be placed upon the charges, only such that the surgeon would charge in a like case.

Many contend that the terms "minor" and "major" should be eliminated and that the amounts should be the usual charges in a community for like services. We immediately see the impossibility of this from the employers' standpoint and we doubt if such an amendment would be acceptable.

Employers of labor must have some definite idea as to what the surgeon's item of expense in each case is likely to be when an employee is injured and requires such service; hence, whatever amendment or alteration of the amount is made from what it now is in this portion of the Act, it must be definitely so stated in said amendment.

Fourth. "Are you satisfied with the waiting period, namely, the treatment of the patient for 14 days, or would you consider the time needed to be extended; and, if so, what length?"

In this also we see a fair proportion of answers requesting that an increase in time be allowed for treatment of the patient. A great percentage of the answers agree that the patient should be under charge of the surgeon until cured or discharged as cured or improved.

In eye surgery it is contended that the minimum time should be at least 21 days and up to 4 weeks in major cases. Where the term "major" is employed, it has been requested to extend from three to six weeks, in order that the period may be covered in the care of this type of cases. One contends that the time limit shall be taken off, but that "the surgeon shall safeguard the employer from graft."

It can justly be contended that the average case of simple injury may be cured to the extent that the employee may return to light work and in a short time to regular occupation, but that the waiting period of two weeks as it applies to the industrial surgeon is evidently too short a time in which to cure the average case of severe injury, even though it comes under the term of "minor."

We can cite numerous instances where the employee has received an injury not requiring hospital treatment, but daily attention and dressing, where nature's efforts were so slow, even with careful assistance on the part of the surgeon, that at least three weeks (or 21 days) would make a mean average in which to return the injured employee to his usual occupation; hence, it would be desirable that the waiting period, as it applies to the services of the industrial surgeon, should be increased.

It is quite true if the time is increased that the amount of compensation must also correspond. It is contended on the part of some that services for special types of cases shall receive special compensation. Here again is the unwise effort made to have an uncertainty as to the amount the employer should pay and the uncertainty of the application of the Act.

Up until the present time no case has been presented to the Medical Society of the State of Pennsylvania, where suit has been brought against the surgeon for alleged malpractice, that would come under the working of the Workmen's Compensation Act, or that did occur while the employee was insured. From this we infer that the services rendered by the industrial surgeons of this state have been above the usual standard and have been satisfactory to the workmen of the state.

As an item of information relative to the application of this provision of the Workmen's Compensation Act, we have much to commend many of the large operators in the state, as well as some of the insurance companies, for their method of conducting their operations. We are familiar with the fact that many have extended the time until the employee was able to return to his usual avocation, giving medical and hospital service for the entire time, besides paying the compensation after the waiting period, namely, 14 days. This surely is commendable and shows they realize the importance of continued medical service till the completion of the disability, irrespective of the limited provisions of the Act.

We may continue to discuss the many-sided features in the application of the Workmen's Compensation Act, inasmuch as each surgeon in his locality may be impressed with disturbances which are not found in other localities, and it is only by getting a consensus of opinion, sifting out the trivial matters from the important, that we can arrive at any just and reasonable recommendations when amendments or alterations of the Workmen's Compensation Act are to be offered.

During the past two and one fourth years' experience in the treatment of injuries occurring in the anthracite coal fields of Pennsylvania we believe that there has been as good and fair an opportunity to observe the workings of this most commendable, philanthropic and righteous aid to the industrial workers, as in any other portion of the state.

There is hardly any possible traumatism to the human body that cannot be seen occurring in these operations; even the operations of war have no greater limit to the variety and severity of injuries seen by the industrial surgeon. Two important observations are necessary in regard to the length which some injuries require as to time for cure: (1) The neglected case after injury, on the part of the employee. (2) The infected wound, either in minor or major injuries.

At least 80 per cent. of all injuries will come under the head of "minor" and 50 per cent. of such patients should be able to return to their work in 21 days. If infections occur, the limit may be greater and we know the difficulty of treatment is surely greater.

Compound fractures in the Workmen's Compensation Acts of some states add 50 per cent. to the amount allowed to the surgeon treating these cases. If infection is considered an element delaying repair in cases, increased compensation must surely be considered as necessary.

Speaking as an industrial physician, I know that there have been instances where physicians have not been paid; where they have contributed more of their time and scientific ability than the law gave them compensation for; and yet, with all of its questionable features as to severity on the part of the profession, it has in the total been of immense value when we must consider that it is the expenditure of money on the part of the employer which previous to this came but little into the hands of the surgeon. It has also opened a field of importance in the treatment of injuries where ordinary surgeons, not on the staff of a large hospital, had but little opportunity to see cases repeatedly and have experience in the treatment of the same; they now become fresh and alert with the knowledge that they are having practical experience and the observation thereby obtained increases their efficiency.

It cannot of course ever be said that the law is satisfactory, or any law satisfactory which takes away the personal privilege of the employee, the right to select his own physician; and yet, from a business standpoint, we cannot and must not expect the employer, who is to pay the expense of treating the injured employee, to allow a haphazard method of business to obtain, wherein he has no control of his own expenditure and less control of the entire system upon which he must build his business in order that it may be made a success; consequently, none of us must expect that the much advocated plan of the employee selecting his own surgeon can ever be realized.

There are two plans adopted in this state and other states, according to the size of the operation, as to the employment of an industrial surgeon. A great percentage of the large coal industries and large manufacturing plants of the state employ their surgeons upon a monthly or annual salary.

This takes away any controversy regarding time and expense as relating to the Workmen's Compensation Act, because the agreement so entered into between the corporation and the surgeon is a mutual one.

But this discussion relates largely to the surgeon who does work for industrial plants, manufacturers, mine and mill owners and operators, where each case is reached separately, where each visit, each operation, each time of service, are items charged against the individual injured employee; therefore those of the profession who are looking to their best interests must aid, must persuade, must lend their assistance toward arriving at a standard of prices and fees that may and shall increase the efficiency of every practitioner in this commonwealth; hence it is our purpose to advocate a reasonable request that the allowance made in the Workmen's Compensation Act shall be and must be increased to the point wherein the surgeon, agreeing to accept this type of work, can be properly recompensed.

If a consenus of opinion says that $50 for the ordinary case shall be the total amount expended for 21 days' service, or as much thereof as may be necessary, and if the service of the industrial surgeon in the care of each case which now comes under the "major" operation scale, shall expect to receive not more than $200 for six weeks' service in the repair of injuries to workmen, it would seem to us fair and honest, consistent with the times and the trend of circumstances, which kept the fee bill down to a minimum when the Act was originally created, that we as a profession must contend for such an increase.

I doubt if there is a physician or surgeon in the state of Pennsylvania who ever posed as a hold-up man, because the law fixes the opportunity for him to be paid for what he does, and we realize often that such laws are made for the rogue; but when the law fixes it so that he can be paid, none I think can be found so mean as to impose upon anyone, either great corporation or small industrial plant, by asking so high a rate for his services as to render the Workmen's Compensation Act a means of extortion.

SUMMARY

We deduce the following observations:

1. That the section of the Act which gives "reasonable medical and hospital services and supplies" at a cost of $25 to $75, all included, should be amended by placing the hospital costs in a separate item.

2. That the limit of the treatment on the part of the industrial surgeon under the Act shall be extended, if the Bureau continues to employ the terms "minor" and "major" surgical operations, to a period of 21 and 30 days after disability begins (21 for minor and 30 for major).

3. That the payment for services shall be direct to the surgeon upon a properly rendered, itemized account, in each individual case, and that he shall be in no wise responsible for hospital care of the patient financially.

4. "That the cost of such services, medicines and supplies shall not exceed $25, unless a major surgical operation be necessary," shall be increased to $50, or as much thereof as may be necessary, "unless a major surgical operation is necessary, in which case the cost shall not exceed $75," be increased to read $200, or as much thereof as may be necessary; and in computing the question of services in minor and major cases, that a fair average be stricken from the general fee bills of the state in which the average type of injury is rated.

5. That we urge upon the employers of labor in the state of Pennsylvania that they take cognizance of the fact that the surgeons of today are collecting statistics in their reports, making a compilation which is to a greater or less extent not appreciated and, of course, not compensated for.

Concluding, I desire to commend the Board which has so splendidly executed the provisions of the Workmen's Compensation Act, under the Bureau of Workmen's Compensation of the Department of Labor and Industry, since its inauguration, and we believe they have endeavored as far as possible to render justice to all parties concerned, which is not an easy thing, and while criticism of the Act has arisen and will continue to arise, I know the provisions of this Act have rendered a great and noble service to the working men and women of every section of the state of Pennsylvania.

Dr. Patterson: Before proceeding with this discussion, I wish to ask anyone who has not registered please to do so, and to leave the card on the desk.

I want to call attention to the fact that on June 10 the annual meeting of the American Association of Industrial Physicians and Surgeons will be held at Chicago, on the day before the meeting of the

American Medical Association and we are counting on the presence of every industrial surgeon.

The next paper on the program will be, "From the Viewpoint of the Insurance Company," presented by Mr. William H. Hotchkiss, Counsel, United States Casualty Company, New York City.

DOES THE TWO YEARS EXPERIENCE WITH THE WORKMEN'S COMPENSATION LAW OF PENNSYLVANIA DEMAND ITS AMENDMENT, AND IF SO, HOW?

FROM THE VIEWPOINT OF THE INSURANCE COMPANY

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As I have listened to this discussion thus far, I have found my mind turning to the proposition, or to the question, "Why do not the physicians and surgeons of my home state do as the physicians and surgeons of this state do; namely, have a conference, a getting together of minds on such a subject?" Perhaps it is because under the New York law we are much more liberal to the physicians and surgeons than you men of Pennsylvania are; but I am certain that much good would result in our state from such a gathering as this, say, once a year.

The question as to whether or not the law needs amendment is easy of answer. From the standpoint of the insurance company, such answer should be an emphatic "No, not yet!" There are a number of very good reasons for this.

1. The Pennsylvania law was prepared by a competent commission, after an investigation which was diligent and world wide. The advice of some of the most reliable experts (among them your own Professor Bohlen) was sought and followed. There were already in operation in leading states, laws of the same character, and the experience of such states was studied and observed. In the end, a law, or, rather, a series of laws, went on the books, representing all of this investigation, opinion and experience. More, the commission was uninfluenced in its conclusions by either capital or labor. A happy medium was thus struck, and the Pennsylvania law was probably the best and fairest which had up to that time been enacted. I say this as a New Yorker, for the New York law, while it represented much investigation, voiced the wishes of one class more than those of another—with the result that it was extreme in its compensation benefits and inclusive at the outset rather of those employments which are unionized than of all industry.

2. Few defects have yet been developed. One need not go far to discover the reason. Again I refer to New York. There, the practice has been to tinker the law extensively each year—and with some justice. New York's is a hazardous group law, and the definitions of "employer," "employee" and "employment" are necessarily limited. There is constant pressure for additions to the groups and to widen the definitions. More, New York's law at first put upon a commission of five men the duty of investigating and adjusting the compensation, if any, due to every work accident (two hundred and fifty thousand or more a year) and the system quickly broke down. Then followed an animated controversy relative to so-called voluntary settlements between employer and employee, which proposal was ultimately adopted by amendment to the law. Still further, New York's law has been much interpreted by the courts, sometimes two or three dozen decisions a month, and these interpretations have made necessary many amendments.

Here, however, notwithstanding the elective system, coverage has from the first been broad, all industry, save domestic and agricultural, being in effect under the law. No amendments are, therefore, immediately needed to extend the coverage. Here, voluntary agreements between employer and employee have been, quite properly, the rule ever since the act went into effect. Hence, no controversy on that subject has developed and no amendments are necessary. Here, litigated questions sent to the highest court, as I am informed, can be numbered on the fingers of both hands. Hence, legal decisions have not suggested amendment. And so I might go on. The law was good to begin with. It has worked out well in practice. It has not required much interpretation, and well enough should be let alone.

But, I take it, the subject presupposes that there will be a demand for amendment by the legislature of 1919. And so I pass from the positive to the speculative, and call your attention to certain basic matters and detail amendments that may well, in that event, have consideration.

COVERAGE

If a workmen's compensation law is a social need to one class or many classes of workers, it is difficult to conceive of any class which is not entitled to the benefits of such a law. Coverage should, therefore, be all-inclusive, with only a single limit; namely, a yearly compensation that marks the cleavage between those commonly described as "workmen, clerks and servants" on the one hand, and the rest of the community on the other.

1. *Coverage of Domestic and Agricultural Labor.*—Thus, there is no reason, other than political necessity, which leads to the exclusion from compensation benefits of domestic servants and agricultural laborers. It is done in the Pennsylvania system; but, aside from a single state, there is the same exclusion in every one of the thirty-eight states now having compensation laws. Not so abroad, and rightly not so, for both of these classes of employments, particularly the agricultural class, are hazardous to a degree. The time may come when the farmer vote as registered in the legislature will not be so potent as to prevent such a change. Perhaps that time may come in Pennsylvania next year.

2. *Coverage Through the Definitions.*—The Pennsylvania law differs from most of our compensation laws in excluding from coverage the victims of all accidents which do not result in violence to the physical structure of the body. While this accuracy of definition tends toward decrease in controversy, the effect is to exclude from the benefits of the system many thousands of persons who are really entitled to the relief. If coverage should be, in effect, as wide as industry, certainly the results of all fortuitous happenings to the worker arising out of the employment should be within the law.

Somewhat conversely, the Pennsylvania law includes a large number of so-called accidents which are excluded elsewhere. This has been done by the omission from the definition of "injury" of the words "arising out of the employment" found in other laws. For instance, a workman, under no particular strain or excessive exposure, drops while at work and fractures his skull. Under the Pennsylvania law, he would be entitled to compensation. Under most of the laws, there would have to be proof that such fall resulted from his work or something in connection with it. There are strong arguments on both sides of this question; but, if the ultimate consumer is to pay only the cost of accidents in industry, he should not be mulcted in addition for accidents due to disease not connected with industry.

3. *Coverage of Occupational Diseases.*—Another question of grave and increasing moment is that of occupational disease. Socially speaking, such a disease as much entitles the sufferer to compensation as does disability due to accident while at work. Few of our laws, and Pennsylvania's is not one of them, include occupational disease. Should not all of them provide compensation for disabilities due to this cause?

4. *Coverage Where Accident Happens out of the State.*—Another, though relatively minor, exclusion is that which results from the Pennsylvania requirement that the accident entitling to compensation must happen within the borders of the state. Thus, is solved by statute the much mooted question of extra-territoriality. In other states where the law is silent, the courts have taken the other view of the matter, recognizing the principle that, in their final analysis, such laws are for the protection of the whole people of a state against the indigence of the individual, and thus have reached the conclusion that, no matter where the accident to a citizen of a state happens, he is entitled to compensation under the laws of his domicile. Such being the tendency, may not Pennsylvania well sacrifice freedom from controversy so far as to abolish its rather narrow rule?

5. *Coverage Through Compulsion Under Constitutional Amendment.*—When the Pennsylvania law was passed it seemed constitutionally necessary that the statute be made elective; that is, that all employers and employees be permitted to exempt themselves from the statute if they took certain prescribed proceedings. How many have done so I do not know; but, now that Pennsylvania has adopted a far-reaching constitutional amendment, there would seem little reason, assuming that the statute is to be amended at all, for the retention by the state of the elective system. A compulsory law would force all employers to pay compensation, and would permit drastic penalties, as in New York, against the employer who did not secure or insure his compensation liability. The tendency the country over is toward compulsory, rather than elective, laws; and Pennsylvania must sooner or later get into line.

COMPENSATION AND MEDICAL RELIEF

Compensation is not wage and should never be equivalent to wage. On the other hand, compensation should not be so meager or so soon discontinued as not to be a reasonably adequate recompense during disability due to industrial injury.

1. *The Schedules of Compensation.*—This leads to the so-called schedules of our com-

pensation laws. Pennsylvania's may be called middle-of-the-road, though it must be said rather on the side toward too little than on the side toward too much. Right here I may make the statement that on a fairly permanent basis, the so-called differential for Pennsylvania is now 1.05. In New York it is 1.91. In other words, we average in expenditure nearly twice as much as you do under the benefits of your law. Theoretically, if the employers of our states are to compete on an equal basis with each other, the compensation schedules of all the states should be practically the same. New York now suffers in competition with Pennsylvania, because New York employers pay a much higher schedule; and Pennsylvania employers pay a slightly higher one as compared with New Jersey employers. Short of a uniform law, equality is impossible. But Pennsylvania, with its rather low schedule, can surely move up a peg, since states like New York, with a very high schedule, and a demand on the part of employees that it be made even higher, cannot move down. You never can decrease compensation benefits. The only change will be upward. For instance, a permanent total disability, as total blindness, in entitling to compensation only for five hundred weeks, cannot be defended by anything save a constitutional limitation or a bad statute. Such a disability should be compensated for life. Likewise, as to a widow during widowhood; and, though perhaps in a less degree, as to maimings which, from their nature, permanently reduce wage earning power. More, 50 per cent. of wage, within such narrow limits as a ten dollar maximum and a five dollar minimum of compensation, seems hardly high enough in an enlightened state like this. Similarly, as to infant dependents, should not compensation continue to the eighteenth year, rather than stop with the sixteenth? And, still on the same subject, why no provision for permanent facial disfigurement; and, in the line of definiteness (assuming that there should be in such laws a specified number of weeks' compensation paid for permanent disabilities affecting earning power) should there not be provision for compensation for the amputation of fingers and toes, the loss of hearing and the like?

In short, when Pennsylvania decides to amend her law, may it not be well to modify the compensation schedule so that the same will provide real, adequate and up-to-date benefits for those of her citizens who suffer from industrial accidents?

2. *Medical and Surgical Relief.*—But the point where I most criticize the Pennsylvania schedule is because of its very inadequate provision for medical and surgical relief. It is not well that 40 or even 30 per cent. of the money paid by industry for work accidents be expended for medical service. On the other hand, it is surely and, in the broadest sense, economically wrong that medical services be limited to the waiting period of fourteen days and an upward limit of twenty-five dollars. Pennsylvania is far behind the times in this feature of her law. There has been hesitation about removing both limits; but, where public opinion is properly alive and the administration of the law is charged upon a reliable commission, a far better way is that which many states have already adopted, and New York proposes to adopt this year, namely, to provide for such medical and hospital service as the injury requires, leaving it to the commission not only to determine the time limit, but by fee bill or otherwise, to hold down the expenditure. The social, to say nothing of the economic, need is that the injured man be put back to work, wholly cured, at the earliest possible moment. How can this be accomplished if in accidents that are at all serious, the physician's bill and the duration of the service are limited as here?

I might give you a figure or two of value. We find in New York that with a sixty-day period in the statute, and without limit as to amount, we are paying about 18 per cent. of the total cost of compensation for medical and hospital service. In this state, you pay about 17 per cent.; but you, in this state, are not paying more than 50 per cent. of the total paid by us. We pay for both hospital and medical service. It would seem to follow that if the physician is to be paid more in this state, the compensation benefits should go up. The highest percentage is in California, where 30 per cent. of the total cost goes out for medical expense. The lowest is in Texas. You are about in the middle.

A change in this particular is highly desirable. More, if it is not made soon, it is not unsafe to predict that, when it is made, there will come with it a provision giving to the employee the right to choose his own physician. While free selection has many advocates, some of them among the physicians themselves, experience elsewhere has shown that it creates in the medical profession the counterpart of the ambulance-chaser, now passing out of the legal profession, results in an average of poor treatment, and is responsible for a great increase in the cost to industry.

Pennsylvania will, therefore, do well to make its law more liberal in this matter of medical service, as well as to set its face at the outset against free selection of physicians by injured employees.

INSURANCE

Whether a compensation law is compulsory or elective, it should contain provisions making compensation certain to each employee entitled thereto. Usually this is done through the means of insurance, and the present tendency, notwithstanding the so-called state insurance experiment in Ohio, is toward giving employers several options as to the kind of insurance they will provide. This tendency was expressed in the Pennsylvania law by what is known as the four-way system of insurance; that is, the employer may insure in a state-managed fund, in a stock insurance company, in a mutual insurance association, or, on furnishing proof of his financial responsibility, need not insure at all. This plan has resulted in competition in rates, in service and in satisfaction, and the result has been good in every way.

1. *Absolute Parity of Competition Between Insurers.* Where a state has definitely committed itself to this competitive system, it should do nothing itself which will give one kind of insurance an advantage over any other kind. Pennsylvania did this when it appropriated moneys toward the expense of its State Fund, an appropriation which is still in force, but to expire with 1919. But, passing that point, now that the Fund is established and successful, the laws of the state should no longer give it advantages over its competitors. It has such an advantage, and a mighty one, in that employers who insure with it are released from all further liability because of industrial accidents happening to their employees; whereas, if the employer is insured in a stock or a mutual company, he continues liable in case such company does not pay. More, the Fund has an advantage, and a mighty one, over its competitors, particularly the mutual associations, in that it seems not obliged to assess in case of deficiency or insolvency. Has not the time come when the State Fund of Pennsylvania should be required to compete on an even basis with the corporations of Pennsylvania and other states in which Pennsylvania employers pool their premiums, that thereby their compensation liabilities may be met? More, what reason is there, assuming, as we must, that the State Fund may not always collect enough to continue itself solvent, for depriving the workman or his dependents in that event from recourse for compensation against his employer insured in the Fund?

2. *Self-Insurance.* I do not know how it is working out in Pennsylvania, but there is complaint in some of the states relative to self-insurers. In New York, the only serious criticism of compensation adjustments is of those made by the self-insurers. In some other states, and perhaps this is true in Pennsylvania, the commission in charge is not properly vigilant in granting permits to self-insure. No such permission should ever be granted save when backed by adequate security equivalent to the insurance reserves and deposited with state authority, unless the corporation be one of such size and undoubted solvency and permanency as to make the payment of compensation benefits certain, no matter how many years they run.

Here, then, are some changes in the insurance scheme of the Pennsylvania law which, assuming that it will some time be amended, may well be considered.

ADMINISTRATION

In the matter of the adjustment of claims, the Pennsylvania law is admirable. It did not, like New Jersey, put this feature of administration in the hands of courts, with the result that scandals developed because of niggardly settlements and deceptions and frauds. It did not, like New York, place the impossible burden of the investigation and adjustment of tens of thousands of claims on five men. Rather, it went to the federal bankruptcy law and provided a referee system, paternalistic in its character and under the supervision of a competent commission, the latter, in effect, sitting as an informal appellate court. I have heard nothing but praise of the working out of this system, and hope that, when the law is amended, such system will not be seriously modified.

But I cannot say altogether the same of the rather complex system of boards or bureaus created by the various statutes making up the Pennsylvania law. Proper practice would seem to suggest that the claim adjustment system be committed to a board or commission not charged with other duties in the labor field. Proper practice would also seem to suggest that the State Fund be a separate commission, in no way affiliated with either the compensation board, or the insurance, or other departments. It is certainly unwise that claims for compensation against the State Fund which it thinks proper to contest be passed on by any board with which it itself is even collaterally connected. And it is equally unwise, especially in the matter of the approval of rates, that the State Fund management owe any allegiance, much less appointment, to any official of the government charged with the supervision of the Fund.

I am not aware, however, that these defects in theory have worked out badly. They may, that is all. And the complete separation of the Fund from the three state officers who control it, as well as, through the Department of Labor and Industry, from the Workmen's Compensation Board, seems desirable.

These, then, are the views of one representative of the casualty companies as to the Pennsylvania Compensation Law. That law is one of the best. It should not be much changed now; but, when the time comes, it may be amended in at least some of the ways here suggested. And I trust that the two amendments first considered and settled on will be (1) establishing exact parity of competition between the State Fund and its insurance company competitors, and (2) furnishing adequate medical and hospital service to employees who suffer from industrial accidents.

Dr. Patterson: We will now have the pleasure of hearing, "The Viewpoint of Industry," as presented by Mr. C. B. Auel, director of standards, processes and materials, Westinghouse Electric and Manufacturing Company, East Pittsburgh.

DOES THE TWO YEARS' EXPERIENCE WITH THE WORKMEN'S COMPENSATION LAW OF PENNSYLVANIA DEMAND ITS AMENDMENT, AND IF SO, HOW?

FROM THE VIEWPOINT OF INDUSTRY

C. B. AUEL
Director of Standards, Processes and Materials, Westinghouse Electric and Manufacturing Company
EAST PITTSBURGH

Opinion is, I believe, almost unanimous in feeling that the present workmen's compensation acts are a decided improvement over the old order of things. I say almost unanimous, advisedly, because that human parasite, the shyster lawyer whose name is legion, would undoubtedly constitute one class of objectors, since these laws have largely taken from him a fertile field in which to exploit his abominable talents.

The reasons for this general approval are not far to seek and lie (1) in the fact that employees are now accorded an opportunity at minimum expense, to secure reasonable compensation for injuries received during the course of employment; and, (2) in the further fact that employers can now pay reasonable compensation for such injuries.

These reasons seem so eminently fair that one not conversant with the situation could hardly be blamed for expressing astonishment since, if this is the way the parties to the controversy feel, there should ever have been any controversy; and, I am not so sure but had the parties been left to themselves to settle the matter, there would scarcely have been any matter to settle. Unfortunately, self-styled experts commenced to meddle, with the result that the principals became the victims of a wide conspiracy, which is only now in a fair way of being exposed and blotted out through the medium of workmen's compensation acts. And so I say, "All hail!" However, should you ask me "Which state compensation act do I unhesitatingly approve?" I could only answer, "Aye, there's the rub." But I feel equally sure that by persistent rubbing, there can be eliminated whatever shortcomings may yet remain in any of the several state compensation acts. It is to discuss some of these shortcomings that I have been asked to join with you today.

A pity it is that our system of government makes necessary the duplication of so many laws by the various states; but, this being the case, why could not the federal government, which is at present engaged in doing some of the most extraordinary things, and doing some of them extraordinarily well, set up for its own use a model compensation act, such that all states could and in fact would want to follow it? If such an act were to be devised, the help of physicians and surgeons should be secured in its formulation, instead of depending so exclusively on lawyers, who seem to have had almost a monopoly in the making and operating of these acts. I feel sure we would thus get less technicalities and more common sense injected into them.

An act such as this, would naturally have to define very clearly what is meant by an accident. It will hardly do to call it a fortuitous or unforeseen event, as the Compensation Board has done, and then make it include certain defects, like hernia, which can be foreseen with considerable accuracy by almost any one, who has given even slight study to the subject, and providing he is not a lawyer.

An act of this kind would also have to specify when a disease was to be classed as such, or as resulting from accident; and, the employee's physical condition at the time of employment, as well as at subsequent intervals prior to the accident, would most certainly have to be taken into account.

Such an act, would further never include what are known as Acts of God, injuries from lightning, earthquake and sunstroke, nor would it include injuries resulting from drunkenness.

It would, moreover, make provision for autopsies in order to determine definitely the true cause of death, where it is not apparent.

In support of these statements, let me cite a few examples, either actual or possible:

An employee having rheumatic tendencies, stoops over at his work; and, on standing erect again, feels a sudden pain in his back or side. He makes his way painfully to the first-aid station and reports the facts as he sees them, or perhaps it would be more accurate to say, as he feels them. There are also one or more witnesses to corroborate his statements, and any suggestion on your part that possibly rheumatism might be the cause, is indignantly refuted, the unanswerable argument being that it never happened before. It does not occur to the afflicted party that all things must have a beginning and that many causes aside from sprains are responsible for pains in the back; if you agree with him, you are no more than fair; but, if you disagree, you are crooked. If the employee has been long in the service, you give him the benefit of any doubt and an accident report is accordingly made out, forwarded to Harrisburg, the employee goes to his home and is laid up for weeks, receiving compensation for his disability. The mere fact of his long disablement is almost proof positive in itself that it was rheumatism. We have had so many accidents of this kind that I believe it would be a good plan to give on our accident reports as the nature of the injury, "rheumatic accident," since if ever there was a lame excuse for an accident, this is it. It will also account for many accidents being reported to the state which really never occur, so that it might be well to change the definition of accident under the present interpretation of the act to read "an unforeseen or even an imaginary event."

Absurd as it is to class such so-called injuries as accidents, when it comes to hernia, the joke stage has most certainly been reached. I used to believe that what physicians said in regard to hernia was true, namely, that it was largely a congenital defect; but the working of our act shows quite conclusively that hernia rarely occurs outside of working hours,.and our own experience bears this out; therefore, the employee who develops hernia must obviously be at least fourteen years of age. Consequently, the act, or the act as interpreted, has seemingly disposed of the theory of congenital defect as advanced by anatomists and surgeons; furthermore, we have had cases in our own works where cuts on the finger or on the cheek have caused not only hernia, but appendicitis, so I am beginning to feel the lawyers must be right as usual, or as near right as usual, and the doctors wrong, and that hernia is to be classed as an accident of a peculiarly virulent type, contagious rather than infectious, since it only requires a single case being paid for by an employer to bring to light many others in the neighborhood which require the same treatment.

In passing, I may say that the Compensation Board has endeavored to apologize for this state of things, as it has gone on record to the effect that "the danger of fraud in such cases, which is no doubt a real danger, may be a matter of regulation by law."

Another employee takes several drinks at one of the conveniently located saloons just across the way from your works; and, entering the works shortly thereafter, is enabled to pass the watchman in good shape. However, the warmth of the shop soon affects him, he becomes dizzy, backs into his machine and is injured. The employer is compelled to pay compensation apparently because the foreman is not sufficiently Argus-eyed to watch over every movement of every workman and protect him from the consequences of his own premeditated folly.

Or, another employee having fulfilled, or filled full, the preliminary steps aforementioned, goes to his work as a crane operator fifty feet in the air with the lives of several of his fellow workers practically at his disposal, until such time as his intoxicated condition makes itself sufficiently evident to those below him to have him removed, providing no accident has resulted in the meantime. Even if he is caught in time, he can only be discharged, and then he goes to another shop to repeat this performance, sooner or later. And he is one of the types the legislature has seen fit to protect in the Workmen's Compensation Act, or so the Compensation Board interprets the act.

It is the height of unfairness to hold an employer responsible for injuries due to drunkenness, "traumatic drunkenness" would be an appropriate term, which should positively be excluded. I have had occasion to say in this building before, and I repeat, that any man who drinks before or during working hours, and then goes in the midst of moving machinery, is committing suicide just as surely as if he used a revolver. It is simply a little longer process with the same ultimate ending, however, and should be put in the same class with suicide.

In this connection it is interesting to note what the Compensation Board has to say: "It has been urged that intoxication, when it results in injury or death, is tantamount to a self-inflicted injury. We do not think this was intended by the Legislation. The intent of the legislature to exclude intoxication or reckless indifference to danger as a defense under Article III is further apparent in that both of these defenses are specifically mentioned as available under Article II, which still recognizes the common law basis, as contra-distinguished from the thought involved in Article III. The distinction between forms of action must have been in the legislative mind and intent, as they were enacted at one and the same time, and are part of one general system and radically differ in their provisions in this respect."

This may be a good interpretation of the act, but it would hardly seem to me that getting drunk "in the course of employment" could be considered as "furthering the employer's business" and it is therefore to be classed, perhaps, as one more instance of good law from the Compensation Board's viewpoint, but poor sense in every other respect, and all I can add in rebuttal is that if the legislative mind and intent were really focused on the subject at the time, as the Compensation Board has accused it of being, then the Legislature must have taken the matter of intoxication too personally. I may further add that I am very pleased to know which particular sections of the act the legislative mind really got focused on, for some of them are most certainly out of focus (but of this more anon), and no doubt the liquor interests are particularly pleased, especially when the compensation acts of so many other states have excluded injuries due to drunkenness as well as to reckless indifference to danger.

Still again, if it is unfair to hold employers responsible for injuries resulting from drunkenness, as I claim, then it is simply making a farce of the workmen's compensation acts to hold them responsible for the acts of God, lightning, earthquake, sunstroke, freezing; "traumatic lightning," "traumatic earthquake," as it were, and so on would certainly look well on accident reports. These acts were intended to compensate employees for injuries received from causes which the employer could reasonably be expected to guard against, not simply to squeeze money out of employers at every opportunity. What would happen if earthquake and fire, such as overwhelmed San Francisco some years ago, should strike any large city under these conditions? Employers would largely go into bankruptcy, and through no fault of their own, and so would the state funds.

The Compensation Board has stated that the Workmen's Compensation Act does not prescribe any standard of health or physical condition to which the workmen of the state must conform to qualify for compensation; nor does it imply a warranty on the employee's part, that he is free from latent disease or physical defect which may develop into serious injury if excited into activity through his exertions in the course of his employment.

Accordingly an employee having varicose veins meets with what under ordinary circumstances would be but a trivial wound; yet, owing to his physical condition, the wound refuses to heal and he must be paid compensation by the employer for the period of his disability.

Now let us assume that another employee having a venereal, otherwise called an immoral, disease, meets with a similiar accident and is likewise incapacitated. Is the Compensation Board justified in ruling the same as before; namely, that he is entitled, mark you, entitled to compensation?

The Board also maintains that it is against the spirit of the Compensation Act (and this must be the same kind of spirit before discussed under intoxication) to discriminate against any applicant for employment on account of a disability. Will the Board still insist on no discrimination being shown between applicants of this kind, and that both be employed if help is needed?

Another applicant for employment is found to have poor vision, being almost blind in one eye and having none too good vision in the other, but which can be helped to some extent by glasses. In the event of an injury to the poorer eye resulting in the loss of the remaining vision in it, the employer will undoubtedly be compelled to pay compensation for the entire eye. I ask you, is this fair? But further and more important than this, if the accident is caused directly by this employee and involves the injuring of other employees in the vicinity in addition to himself, will the Compensation Board assume responsibility? The Industrial Board advises employers, in effect, not to take a chance, but to play it safe in order to conserve life and limb; while the Compensation Board says, in effect, you have got to take a chance, the rates of insurance are low.

Under the foregoing circumstances, I say, that until the state takes cognizance of the physical condition, or lack of physical condition of applicants for employment, employers will be forced to do so.

Much existing dissatisfaction with several of the features mentioned could be relieved by absolving employers from the payment of compensation except perhaps in modified form, in the event of an injury being made more acute by an existing defect. The acts of a number of other states do so. Surely releases could be drawn up before hiring employees having obvious defects, which releases could be submitted to the Board, the same as is now done with compensation agreements, and requiring their approval before becoming effective. Such releases could be made to cover medical or surgical treatment only; or, if compensation were included, to make it for but a short period. I recall one case of an employee working for us for six weeks, then receiving a bruise on the shin, which, due to his syphilitic condition, incapacitated him for about eighteen months, during all of which time he was paid compensation by us, because the Compensation Board had ruled in a previous case that it was a justifiable claim. I ask this audience, wherein lies the justice of it? While the layman might think this a most unusual and, therefore, a very rare accident, this audience need not be told how common it is, and the same may be said of a number of other ailments.

Another employee has an epileptic stroke, or a cerebral hemorrhage and, falling to the floor, dies. A referee has expressed the opinion that the fall, not the attack should be considered the cause of his death and since there is no provision for an autopsy to be made, the referee's opinion is as good as any one's else, rather better in fact, though the logic of such reasoning may not be, and once more the employer must pay compensation.

One of the most perplexing parts of the entire act, and, one in which a referee found in accordance with the original informal statement of the Compensation Board, yet which the Board later reversed, thereby reversing both itself and the referee, has apparently now been settled. I refer to a disability partial in itself, but which in connection with a previous disability, completes the total disability; for example, an employee entering employment with but one eye and subsequently losing it, is compensable for the loss of the eye only, not for total disability. While it does not seem right from the standpoint of the employee, to class the loss of a remaining eye as compensable only for partial disability when in reality it completes the disability, nevertheless from the employer's standpoint it seems equally wrong to class it as total disability.

It also brings to the front a new question; namely, what compensation shall be paid an employee already permanently disabled, partially or totally, in the ordinary acceptation of the term, but who having been placed again in the position of being able to earn a livelihood, is once more disabled? This will be a most vital matter for the entire community within a very short time, due to the war, which will undoubtedly work profound changes in our present views of many things. Employers are now being asked by the various states and the federal government to estimate on the percentages of variously disabled employees they could place to advantage; but, while this is simply impossible to state, unless the volume and kind of business on hand at such time could be first foretold as a basis, nevertheless, it is indicative of what is to come, and to my mind will compel either the recognition of certain defects before employment, as not being compensable, or else assistance being rendered employers by the government in the payment of compensation. For example, if a one-armed soldier were to be given an occupation, and be so unfortunate as to lose his other arm during the course of employment perhaps, it could be arranged that while the employer would pay for the loss of the arm, the government would pay the difference between the compensation due for the loss of the arm and that due for total disability. Before leaving this portion of the subject, I would like to add that in all discussions I have heard, as to the placing of disabled soldiers at work, in none of them have I heard discussed the question of transportation, which will be in many cases the crux of the whole matter. Bus service could be organized to carry the workers to their work, as well as to carry the work to the workers; but, for this to be practical, the workers must live in a comparatively small area.

Referring again to the act, there are a number of sections which are not at all clear, and a reading of them leaves the impression that the art of "camouflage," supposed to be an outcome of the last year of war, was really used at Harrisburg to a considerable extent at an earlier date. One or two of these may be briefly referred to as follows: "Any person who at the time of injury is engaged in domestic service or agriculture" is excluded from the act. The phrase "at the time of injury" was intended by the legislative mind before referred to, to clarify the situation; but, it is liable to provoke as much discussion by having been put in as if it had been left out; and the terms "domestic service" and "agriculture" most certainly require further definition.

Again, the differences in obligation between an employer and a contractor are not sufficiently explicit, especially when the erection of large buildings is considered, where the owner enters into an agreement with a general contractor who in turn must sublet to other contractors certain portions of the work, doing, however, a part himself; nor, are they clear as between an employer and a contractor doing repairs to equipment or buildings.

In the absence of further legislation, it looks as if a number of these points will simply have to be brought deliberately before the referees, then before the Compensation Board, followed by a period of waiting to see if appeals are taken to the courts, before it can be definitely decided as to what are the answers, regardless of what was intended. A remarkable situation truly when the law is such that one party thinks it means one thing, the other party is equally sure it means the diametrically opposite; while it will probably be found, as a matter of fact, to be something quite different to what either thought, and no doubt different to what the framers had in mind.

I am reminded of a story bearing on a situation of this kind which once arose and which, at the risk of being somewhat verbose, I am going to take the liberty of repeating:

In ancient Greece lived a learned judge who was very deaf as well as cross-eyed. Before him one day there appeared two litigants who also were deaf. There being no attorneys, in those days, the judge invited the plaintiff to state his case. The plaintiff arose. "This man," he said, pointing to the defendant, "is a tenant on my property. He hasn't paid any rent for a long time, and refuses to do so. I ask your honor for a decree which will enable me to collect what is due." The plaintiff, having finished and sat down, the judge motioned the defendant to stand up and tell his side of the story. The defendant, therefore, arose and said, "I do not own the dog. I am sorry he bit the gentleman, but he does not belong to me, and I do not feel that I should be responsible for the damage he inflicts." The defendant then sat down and the judge drawing his robe a little closer about him, finally said, while looking straight at both parties, "To forget the ties of blood, is exceedingly reprehensible. She is your mother, and you must support her." At this decision no one could take exception; because, as an abstract proposition, it was correct, so every one left the presence of the learned judge well satisfied, that he had side stepped again.

It, of course, speaks well for the act that by its provisions, an employee or his dependents can, if they feel they have not received fair treatment in the matter of compensation for an injury, lay their case before a referee and obtain a hearing; but, the mere fact of its being so easy to do is undoubtedly the reason for its being overdone, as is now happening; for instance, in a period of seven weeks, seven of our old employees died from natural causes, cancer, acute Bright's disease, appendicitis, alcoholism, etc., and their widows either actually went before a referee or threatened to do so, in an effort to prove that the deaths of their husbands were due to accidents which they claimed took place from two months to fourteen years previously, and in no single instance did we have a record of an accident. It was not only necessary for us to prepare our defense each time; but, in several of the cases, the widows did not appear at the first hearings, making it further necessary to postpone them and thus continue to subject us to needless expense. Again, we find lying is sometimes resorted to and that in the most unblushing fashion. I am not prepared to do more than point out at this time features like these, which, if not dealt with by those in authority, inflicting some penalty, will in due course bring unmerited odium on the act.

Turning next to the furnishing of surgical, medical and hospital services, medicines and supplies, assuming the injuries to be real, not pseudo or imaginary and not including absurdities like rheumatism, varicose veins, venereal disease, hernia, lightning, freezing, sunstroke, fits, earthquake, cerebral hemorrhage and so on, then I feel the employer should stand all such reasonable expense. Our company has not only done so for several years, but goes considerably further and absolutely spares no expense to put an injured employee back on his feet. At each of our works we have an emergency hospital, manned regularly by our own surgical staff, and have further a ward for our own use in one of the hospitals; though, of course, we frequently call on outside specialists to assist us.

As to whether or not an employee should be allowed to choose his own physician or surgeon would, in my estimation, depend on a number of things. Often we permit it to be done. Sometimes it is simply because the employee has gone to his home, or elsewhere, too remote for us to visit him. At other times it is because the employee has desired it. Personally, if I were hurt, I should like to feel I could exercise my judgment in the matter; but, on the other hand, many employees, more especially the foreign element, are like children and if left to their own devices would either not go to a physician at all, or perhaps fall into the hands of quacks. As a young man, I used to feel the legal and the medical professions were the noblest among man's attainments and that practitioners would act accordingly; but, I am sorry to say, my ideals have long since been shattered, for I find their ranks are no freer from money grabbers than any others and they base their charges largely not on an ideal, a fair return for services rendered, but on what the market will stand. Accordingly, I am ready to say a regular schedule of prices should be set with a higher maximum than at present.

It is pertinent to inquire in the event of employees being allowed to choose their own physicians and surgeons how far employers should be bound to accept their findings. Certainly it will not do to permit licensees under the Drugless Therapy Act the same freedom as is accorded regularly qualified practitioners. Perhaps a safe plan to follow would be to recognize only such as are recognized by the federal government.

Again, in cases where employees are attended by physicians and surgeons of their own choosing, the privilege of periodic examinations should in equity be accorded to experts of the employer.

A model act would cover both of these points.

Now as to the two weeks' period of waiting after an injury before compensation begins. If the injuries are real, not pseudo or imaginary, then there should be no period of waiting, and our company has for several years adopted this policy. The difficulty, however, is to distinguish between real and assumed injuries; and, until the act is made less inclusive of all aches and pains, I am in favor of a waiting period, though two weeks is rather too long.

Taking up next the amount of compensation payable for an injury in this state, why should an injured employee during his complete disability receive but 50 per cent. of his wages, especially as a maximum limit is set on what he shall receive in any event? His expenses at such a time are higher than usual and he certainly needs, therefore, every penny he can get. In theory, at least, there is no reason why he should not be paid the full equivalent of his wages for any legitimate accident as the result of his employer's negligence and by which he is deprived of the ability to earn a livelihood; furthermore, I feel that with this statement practically all employers will agree.

Unfortunately, there is, as has already been mentioned, great difficulty at times, not only in differentiating between real and pseudo injuries and effects; but, there is also the matter of insurance other than compensation and payable by insurance companies, lodges, benevolent societies and the like to be considered. If compensation or compensation plus insurance were to equal or approach the wages, there would be no inducement to a worker to return to his occupation as long as such income could be continued. It is a sad commentary on the frailty of human nature; but, the facts cannot be gainsaid.

Again, the compensation act has been made to include practically everything in the nature of an injury that can possibly happen to an employee. Still again, as a worker grows older in years, it is obvious his recuperative powers diminish; therefore, the same injury will produce a longer disability in the same individual the older he is.

These are among the reasons, though not all, that preclude the payment of full time during disability.

Admitting, however, that there must be a safeguard of this kind, why should there be such a diversity of opinion as to what constitutes a proper rate of compensation? Ohio, Massachusetts and New York have for total disability fixed on 66⅔ per cent.; California and Wisconsin feel that if as much as this were allowed, nobody would go back to work, so they have made the percentage a shade less, 65; Nevada and Texas state that in their judgment if the percentage were made as high as either of these figures, every one would malinger within their borders, so they have settled on 60 per cent.; little Delaware, with but three counties even at low tide, has recently adopted a Compensation Law, no doubt after careful investigation of the experience gained by other states, and says employees will loaf on even less and has, therefore, made it 55 per cent., while a number of other states, including Pennsylvania, feeling a half loaf is better than no loaf at all, have settled on 50 per cent. This variance is typical of the way in which compensation laws differ from one another, not in fundamentals but in absurd details, for which there is no excuse. And it is appalling to think that state legislatures continue to waste the taxpayer's moneys in hiring lawyers, experts and others to draw up duplications of this kind when the federal government could in one act do what is needed once and for all; in fact, I believe it would be almost possible to frame a model act out of the provisions of the acts already in existence.

Our company has an accident compensation plan of its own, which was instituted before the present Workmen's Compensation Law went into effect, and in many features it is more liberal and fair than the law of this or any other state. By giving you one or two of its provisions, it will illustrate how our company feels on this important matter of compensation. Our accident compensation plan is open to all employees who become members of the Relief Department. Our Relief Department provides insurance for sickness and accident (off duty) and is supported wholly by the company in the matter of operating expenses, thus allowing the dues, paid in by the members, to be reserved entirely for the payment of benefits.

The employees are amply safeguarded against overdoing it, in that none are permitted to join to an extent greater than their wages or salary would warrant; for example, if an employee were earning between $30 and $45 per month, he would only be permitted to pay 50 cents per month, but would receive in benefits, if he became disabled $5.50 per week just as long as he was disabled; if he earned between $45 and $60 per month, he could only pay 75 cents per month, but would receive $8.25 per week and so on up to the $1.50 class when he would receive $16.50 per week. Membership in our Relief Department also makes the employees eligible for still another of our plans, our service pension plan which retires employees between the ages of 60 and 70 years on pension, after a certain period of continuous service; the pension being based on 1 per cent. of the average monthly wages or salary over the last ten years of service, multiplied by the number of years of service.

I did not come here, however, to advertise the advantages of being employed by our company, but am simply pointing out such requirements as are necessary to be met by our employees in order to be eligible for participation in our accident compensation plan. Referring again, therefore, to our accident compensation plan, two thirds wages are paid with a maximum compensation of $15 per week, commencing from the time of disability and continuing throughout disability, or until the age of 60 or 70 years is reached, after which the employee would be transferred to our service pension plan, the entire period of disability being counted as time in the service of the company, when computing the pension.

You will note that we feel 66⅔ per cent. of the wages should be paid, and the only requirement to participation in our compensation plan is that the employee must take out an insurance policy against sickness and accident when off duty.

As already mentioned, our plan was put into effect before the present Compensation Law. Under it we classed hernia as sickness, not as accident. Since the law went into effect we have, of course, had to class it as accident; but we simply pay compensation according to the law, not according to our more liberal plan. It is also possible we will further modify our plan and treat injuries due to intoxication, immoral diseases, etc., in the same way.

In what I have said here, the surface has been but lightly touched. Much more can, of course, be said. Added objections will turn up with a longer working of the act, as new conditions present themselves. It, however, should be borne in mind that one cannot get something for nothing, at least not for long; that neither capital nor labor can have its innings continuously; that neither side can "put it over" on the other side without its eventually coming the other side's turn; that absolute fairness and common sense must prevail; if these points be borne in mind, then there is no reason why, as stated at the beginning of this paper, whatever shortcomings are in the present act, they cannot be successfully worked out.

Dr. Patterson: The only regret that I have is that we have not present at this meeting the members of the Legislature, so that they might be enlightened by these remarks. The subject of compensation is so vitally interesting to all, that it is now open for general discussion. We have with us that very rare specimen which occasionally comes into the halls of the Legislature, known as a claim agent; and it seems to me that we should have a few words from Mr. John C. Rose of the Pennsylvania Railroad Company.

DISCUSSION

Mr. John C. Rose, Pennsylvania Railroad Company: I am not listed as one of the speakers and would not at this late hour attempt to discuss the subject which has been presented today so ably. The views expressed, though widely divergent, furnish, it would seem, a common ground on which the questions could be met to a perfect solution of the problem. Primarily, however, I would say that the compensation principle as applied, to me presents some very objectionable features and I do not think it has gone far enough in the purpose of relieving the wage earner from the burden of involuntary idleness.

As to Pennsylvania, I cannot understand the morality of excluding farm labor and domestic service from the vocations dealt with in the law. Clearly it is a miscarriage of the beneficent purposes of such laws to exclude any character of service in the readjustment of the ancient relations between master and servant.

As evidence of the evil of excluding any kinds of employment permit me to give you two cases for comparison. The first, a farm laborer, American born, is injured while in the performance of his regular duties and under the law must bear his own losses. If his injuries result in death his dependents may go to the poorhouse for all we care, or rather for all our representatives who enacted this legislation cared. Whereas, an alien injured, engaged in similar work neither on a farm nor in domestic service, has his personal needs supplied and his dependents are protected against distress by the due process of this law in the wisdom of its makers.

Furthermore, I can conceive of no good reason why an employee, who contracts typhoid or other illness in consequence of some deficiency in the plant in which he works or from any cause entirely beyond his control, should not be a beneficiary of the remedy which originally was intended to remove from society the burden of the idleness associated with manual labor.

But this idea of compensation for idleness beyond individual control should be extended to illness of all character, even beyond industrial pursuits. This is beyond the pale of compensation as applied in this country, but its adoption would avoid many of the evils which have appeared in Europe through long experimentation with the idea.

But the financial loss from idleness should not be treated as an expense of industry but should be borne by the whole people through an insurance fund raised by general taxation to be administered by the state.

This is a subject which would take a long time to deal with and, as before stated, I came here to listen and not to speak. The suggestion is left with you for deliberation on another occasion.

Dr. Patterson: Gentlemen, the hour grows late. On behalf of the Department of Labor and Industry, I wish to express our deep appreciation of your courtesy and of your cooperation with the department in coming here at this time. I wish to remind you again that the annual meeting of the American Association of Industrial Physicians and Surgeons will be held at Chicago on June 10. I trust that every industrial physician in the country will make it a point to be present at that time. I wish you good evening.

Adjourned *sine die* at 5:30 p. m.

List of persons attending the Sixth Conference of Industrial Physicians and Surgeons, held under the direction of the Department of Labor and Industry, April 9, 1918

Albert L. Allen, Assistant Manager, State Workmen's Insurance Fund, 206 Walnut Street, Harrisburg.

Dr. A. V. Allen, 72 W. Adams St., Chicago, Ill.; Commonwealth Edison Company.

Dr. Oakley A. Allen, 1319 W. 9th St., Erie; Erie Forge and Steel Company.

Dr. C. D. Ambrose, Ligonier; Ramsey Coal Company.

C. B. Auel, East Pittsburgh; Westinghouse Electric and Manufacturing Company.

Dr. William F. Bacon, 50 S. George St., York; Certain-teed Products Company.

John Bailey, Ridley Park; The Bell Telephone Company, Philadelphia.

Miss Rebecca Ball, 121 State St., Harrisburg; Pennsylvania Department of Labor and Industry.

E. J. Barrett, Pittsburgh; American Steel and Wire Company.

Dr. H. M. Bascom, Mayer Building, Peoria, Ill.; Illinois Traction System.

Dr. Rosalie Bell, 125 W. 16th St., New York City; New York State Department of Labor, 230, 5th Ave.

Dr. W. H. Berge, Bank Building, Avoca; Lehigh Valley Coal Company.

Dr. C. A. Bicking, 5177 Liberty Ave., Pittsburgh; American Bridge Company, American Sheet and Tin Plate Company.

Dr. William Thomas Bishop, 211 Pine St., Harrisburg; Pennsylvania Railroad Company, Philadelphia.

Dr. Walter H. Blakeslee, 3328 N. 17th St., Philadelphia; Pennsylvania Department of Labor and Industry.

Major Joseph C. Bloodgood, M. R. C., U. S. A., 904 N. Charles St., Baltimore, Md.

Dr. Elizabeth B. Bricker, Harrisburg; Pennsylvania Department of Labor and Industry.

Dr. Howard E. Bricker, 2200 N. 8th St., Philadelphia; Philadelphia Rapid Transit Company.

Dr. F. E. Brister, 605 Reading Terminal, Philadelphia; Philadelphia and Reading Railway Company.

Dr. H. B. Buterbaugh, Indiana; Indiana Hospital.

Dr. W. H. Cadmus, Rochester, N. Y.; Art in Buttons, Incorporated.

Dr. John A. Campbell, 838 Funston Ave., Newberry; Pine Iron Works Company, Williamsport, West Branch Steel Company, J. E. Dayton and Company.

Dr. R. C. Casselberry, 700 Madison St., Chester; Baldwin Locomotive Works, Eddystone Munition Company, Eddystone.

Ronald E. Cates, Washington, D. C.

Dr. R. W. Chaffee, 1626 W. Genesee St., Syracuse, N. Y.; Semet Solvay Company.

W. E. Chick, 334 Spruce St., Steelton; Bethlehem Steel Company.

Dr. Harold M. Clarke, 477 State St., Bridgeport, Conn.; Crane Company.

Dr. Benj. F. Coe, Clymer; Clearfield Bituminous Coal Corp., Russell Coal Mining Co., Clearfield.

Dr. A. W. Colcord, Clairton; Carnegie Steel Company, Pennsylvania Railroad Company.

Dr. M. B. Cooperman, 1811 S. Broad St., Philadelphia; Franklin Sugar Refining Company.

Dr. Thorne Cornelius, Riddlesburg; Colonial Iron Company.

Dr. J. A. Cousins, 403 S. State St., Chicago, Ill.; Union Bag and Paper Company.

Dr. A. G. Cranch, 810 Rankine Ave., Lawrence Park, Erie; General Electric Company.

Dr. John F. Culp, 410 N. 3rd St., Harrisburg.

Dr. Gilbert L. Dailey, 713 N. 3rd St., Harrisburg; Harrisburg Pipe and Pipe Bending Company.

George L. Daley, 19th St. and Allegheny Ave., Philadelphia; The Electric Storage Battery Company.

Dr. E. H. Davies, Old Forge; Jermyn Coal Company.

Dr. D. W. Davis, Six Mile Run; Commercial Coal Company.

Dr. George C. Davis, Milton; American Car and Foundry Company.

Dr. Herbert L. Davis, 714 Schofield Building, Cleveland, Ohio; Standard Parts Company.

Dr. Park A. Deckard, 709 N. 3rd St., Harrisburg; Moorhead Knitting Company, Bowman & Company.

Col. Philip S. Doane, M. R. C., U. S. A., United States Shipping Board, Washington, D. C.

Dr. J. F. Donehoo, 212 Trust Building, Washington; Pittsburgh Railways Company, Pittsburgh.

Dr. Henry R. Douglas, 1800 Market St., Harrisburg.

James B. Douglas, 1401 Arch St., Philadelphia; The United Gas Improvement Company.

Dr. Paul B. Dunn, Mahanoy City; Philadelphia and Reading Coal and Iron Company, Pottsville.

Dr. Eugene Elgin, East Berlin.

William S. Essick, Union Trust Building, Harrisburg; Aetna Life Insurance Company, Hartford, Conn.

Dr. George O. Evans, Uniontown; Oliver and Snyder Steel Company, Oliver.

Dr. W. D. Farber, Northampton; Lawrence Portland Cement Company.

Richard V. Farley, 2423 N. 10th St., Philadelphia; Pennsylvania Department of Labor and Industry.

Dr. William P. Faust, 22 Jay St., Schenectady, N. Y.; American Locomotive Company.

Dr. J. C. Fisher, 45 William St., New York City; Globe Indemnity Company.

Dr. Frank B. Fisk 4926 Park Ave., Indianapolis, Ind.; Pitman Moore Company, 111 N. Capitol Ave.

Dr. J. Gordon Fletcher, 2545 Aramingo Ave., Philadelphia; John T. Lewis and Brothers Company.

Dr. James G. Flynn, Ridgway; Buffalo, Rochester and Pittsburgh Railway Company, Rochester.

T. F. Foltz, Harrisburg; Pennsylvania Department of Labor and Industry.

Dr. James W. Geist, 527 S. Franklin St., Wilkes-Barre; Lehigh and Wilkes-Barre Coal Company, 16 S. River St.

Dr. John M. Gelwix, Chambersburg; Cumberland Valley Railroad Company.

Horace B. Griffith, Ridley Park.

J. M. Hageman, Indianapolis, Ind.; Pitman Moore Company.

Dr. Edward N. Hagin, 405 Hamory Bank Building, Sharon; Sharon Steel Hoop Company, Savage Arms Company.

Dr. G. H. Halberstadt, Pottsville; Philadelphia & Reading Coal & Iron Company.

C. M. Hansen, Huntingdon; Pennsylvania Mutual Liability Association.

H. B. Harmer, 1000 Chestnut St., Philadelphia; The Philadelphia Electric Company.

H. Herbert Harris, Milton; American Car and Foundry Company.

Dr. Lawton M. Hartman, 150 S. George St., York.

Dr. A. S. Harshberger, Lewistown; Standard Steel Works Company, Burnham.

Dr. G. L. Hays, 816 Empire Building, Pittsburgh; National Tube Company.

Dr. David Jos. Hetrick, 54 N. 13th St., Harrisburg; Dauphin Cigar Factory.

Dr. H. Chalmers Hickman, 613 Delaware Ave., Wilmington, Del.; Joseph Bancroft & Sons Company.

Dr. Wm. S. Higbee, 1703 S. Broad St., Philadelphia; Pennsylvania Salt Manufacturing Company, Widener Building.

Dr. Wm. H. Hinkel, Tamaqua; Lehigh Coal and Navigation Company, Lansford.

Dr. J. B. Hileman, 413 Market St., Harrisburg; Pennsylvania Railroad Company.

Dr. Hiram M. Hiller, Chester; Sun Ship Building Company, Suburban Gas Company.

William H. Hotchkiss, 55 Liberty St., New York City; United States Casualty Company, 80 Maiden Lane.

Dr. H. P. Hourigan, 735 Seneca St., Buffalo, N. Y.; Larkin Company.

Dr. Robert McG. Hursh, 53 S. 2nd St., Steelton; Bethlehem Steel Company.

Dr. E. H. Ingram, 1503 N. 22nd St., Philadelphia; Wm. Cramp & Sons Ship and Engine Building Corp., American Engineering Company.

L. L. Iobst, 29 Chestnut St., Lebanon; Bethlehem Steel Company.

W. E. Jackson, 25 S. 17th St., Philadelphia; Victor Electric Corp., Chicago.

Geo. F. Jacobs, East Berlin.

Dr. E. B. Joachim, Athens; Pennsylvania Department of Labor and Industry.

Dr. Charles W. Johnstone, DuBois; Buffalo, Rochester and Pittsburgh Railway Company, Rochester.

Dr. Dudley R. Kathan, 610 Union St., Schenectady, N. Y.; American Locomotive Company.

Dr. H. D. Kessler, Ridley Park; National Aniline and Chemical Company, Marcus Hook.

Dr. Philip Gordon Kitchen, Highland Park, Upper Darby; Surpass Leather Company, Philadelphia.

J. Herman Knisely, Harrisburg; Pennsylvania Department of Labor and Industry.

W. G. Kuhlman, Youngstown, Ohio; The Youngstown Sheet and Tube Company.

Dr. A. H. Laros, Northampton; Atlas Portland Cement Company.

Miss A. Estelle Lauder, Otis Building, Philadelphia; Consumers' League of Eastern Pennsylvania.

William Lauder, Harrisburg; Pennsylvania Department of Labor and Industry.

Dr. Charles A. Lauffer, 521 Franklin Ave., Wilkinsburg; Westinghouse Electric & Manufacturing Company, East Pittsburgh.

Dr. T. H. Lautenschlager, 9 E. Woodland Ave., Youngstown, Ohio; Sharon Steel Hoop Company, Sharon.

Dr. G. L. Laverty, 404 N. 3d St., Harrisburg; Harrisburg Pipe and Pipe Bending Company.

Dr. J. F. Lewis, Depue, Ill.; Mineral Paint Zinc Company.

Jacob Lightner, 814 N. 16th St., Harrisburg; Bureau of Employment, Pennsylvania Department of Labor and Industry.

Harry A. Mackey, Philadelphia; Chairman, Workmen's Compensation Board, Pennsylvania Department of Labor and Industry, Harrisburg.

Dr. M. E. Malaun, Malaun Building, Carbondale.

Dr. Frank Marshall, Ashland; Lehigh Valley Coal Company, Centralia.

W. H. Marshall, 1401 Arch St., Philadelphia; The United Gas Improvement Company.

Major Edward Martin, M. R. C., U. S. A., 1506 Locust St., Philadelphia.

Dr. J. B. McAlister, 234 N. 3rd St., Harrisburg.

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Dr. H. E. McGuire, 500 Pittsburgh Life Building, Pittsburgh; Jones and Laughlin Steel Company.

Dr. W. G. McKinney, 6022 St. Marie St., Pittsburgh; Pennsylvania Railroad Company, Pitcairn.

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Dr. W. H. Means, 2122 W. Passyunk Ave., Philadelphia.

Dr. J. E. Meloy, 901 Lehmann Building, Peoria, Ill.; Keystone Steel and Wire Company.

Dr. S. P. Mengel, Wilkes-Barre; Lehigh Valley Coal Company, 133 N. River St.

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Dr. Wm. J. Middleton, 2d and Pine Sts., Steelton.

Charles T. Miley, Reading; The Carpenter Steel Company.

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Dr. F. B. Norton, Philadelphia Building, Pittsburgh; Pittsburgh Railways Company.

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Dr. W. H. Oliver, 84 William St., New York City; Royal Indemnity Company, 84 William St.

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Lew R. Palmer, Harrisburg; Acting Commissioner, Pennsylvania Department of Labor and Industry.

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Dr. R. M. Patterson, Beaver Falls; Pittsburgh and Lake Erie Railroad Company, Stand Gauge Steel Company.

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Dr. Chas. H. Pike, 3500 Gray's Ferry Road, Philadelphia; Harrison's Works, E. I. du Pont de Nemours and Company.

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Dr. Frank F. D. Reckord, 220 Kelker St., Harrisburg; Pennsylvania State Department of Health.

A. D. Reiley, Washington, D. C.; Industrial Service Section, Ordnance Office, U. S. A.

Dr. W. E. Reiley, Clearfield; New York Central Railroad Company.

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Dr. E. R. Whipple, 210 S. 2d St., Steelton; Bethlehem Steel Company.

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Dr. W. H. Wood, 318 Euclid Ave., Cleveland, Ohio; Willard Storage Battery Company.

Dr. G. R. Wright, Landing, N. J,; Atlas Powder Company, Wilmington, Del.

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SELECTION

COMMITMENT OF THE INSANE*

BY FRANK WOODBURY, M.D.
Secretary of Committee on Lunacy of Pennsylvania

In this commonwealth we have followed the English law very closely in the matter of commitment of mental defectives by the court; but have departed from it in one important particular, and that is in authorizing institutions to receive and detain for care and treatment patients certified under the Act of May 8, 1883 (known as the Lunacy Act), to be persons suitable for detention, where it is for their own welfare. We have also made provision by law for voluntary self commitment by a patient, for a limited time.

We have therefore three groups of patients among the 21,000 inmates of institutions for the insane, at present receiving care and treatment in Pennsylvania: (1) Cases committed by court; (2) cases certified by friends, relatives, or Poor Boards, and (3) voluntary patients.

We have also provided by law for the reception of noncommitted cases in psychopathic wards, for observation, diagnosis and temporary treatment.

1. Cases committed by court may be (a) criminal or (b) noncriminal. The criminal insane are defined as "insane criminals in custody" (Section 29, Lunacy Law). The order of the court in such cases usually directs that the person named "shall be detained until further order of the court." The law requires that he shall be taken to the hospital by the sheriff, who shall deliver the patient with the order, under seal of the court, and signed by a law judge. When discharged a simliar order must be produced by the sheriff of the county or his deputy. While detained as an insane person such criminal shall be so kept as to insure his detention until duly discharged.

(a) The group of criminal insane includes: Those who have become insane before serving out the time for which they were sentenced (the convict insane); those who were tried by court and acquitted on the ground of insanity; those who were found to be insane while in prison awaiting trial; those who having committed some criminal offense, and who are known to be dangerous to the community on account of their insanity and criminal tendencies.

By the Act of July 5, 1917, all the costs and expense for the criminal insane in institutions, are placed on the counties. It is therefore important for the courts to make it clear in the order of commitment whether or not the insane prisoner is to be classified as "criminal" and detained in custody subject to further order of the court.

(b) The noncriminal insane may be committed by the court in order to make provision for the support of the patient. In such case the order is made against the guardian of the estate of the person, or some relative, or in the case of paupers, against the Poor District.

The court may also order the commitment of the feeble-minded, according to the Act of 1913, referring to the institution at Spring City.

2. Cases not committed by the court. The Act of May 8, 1883, known as the Lunacy Act, makes it possible to have a person suffering with mental disorder cared for, without legal delay and court expenses. In fact, it treats a patient suffering with mental disease, like a sick man, just as if he were suffering with any other form of disease for which institutional treatment is considered desirable for the welfare of the patient. If a man suffers with typhoid fever, or appendicitis, his friends place him in a hospital as promptly as possible. In the same way the Lunacy Act makes it possible to bring the insane person under the care and treatment only to be obtained in a well managed hospital for psychopathic patients. The law, however, does place some restriction on the commitment by friends, by requiring the order or written request for admission to be accompanied by a physician's certificate, signed by two physicians, and sworn to before a magistrate, which validates the order. The patient cannot be received without the order is accompanied by the physician's certificate.

It is to be observed that while this is usually spoken of as a commitment, yet it does not belong to the group of court commitments. It is plainly an emergency measure designed to ensure early treatment for the insane patient with the minimum of trouble and expense. Where the detention is likely to be for a prolonged period, the question of a court commitment might well be considered after a suitable period of observation, say three months in the hospital.

There seems to be a persistent misunderstanding in the minds of a few physicians, especially in the western end of the state, about this law, with regard to the certificate signed by the physicians. It is assumed that the physicians make the commitment, and so render themselves liable for damage suits by discharged patients. On the contrary, the relatives' request is the legal authority for the detention of the patient, the physicians' certificate is merely a certified medical opinion that the patient needs treatment for his mental disease, and that the detention in a suitable institution would be for his welfare. The physicians do not order his removal to an institution, nor do they designate any special hospital to which he shall be taken. They are responsible for their diagnosis and opinion; but they are not responsible for the action of the relatives or poor directors in selecting the institution and arranging with the authorities for the care and treatment, and incidental detention of the patient.

3. The voluntary self-commitment of the patient is also provided for in the Lunacy Act, Section 34. It is limited to a period of one month or less, and must be signed by the patient, and also the medical attendant.

Patients may be admitted to psychopathic wards for observation and treatment, either voluntarily, or by court commitment. In the case of indigent cases committed by a court the state is liable for expense of maintenance, up to $2 per day.

The lunacy laws of Pennsylvania have been in operation and working smoothly for more than a third of a century. To the physicians and superintendents of hospitals for the insane it is a subject for congratulation, that the matter of commitment is made so simple and free from formality. The safeguards thrown around the patient in order to protect him from illegal detention appear to be sufficient to secure the desired result, while avoiding the publicity and expense of a court hearing.—*Blair County Medical Bulletin,* May, 1918.

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*Read before the Blair County Medical Society, April 23, 1918.

THE PENNSYLVANIA MEDICAL JOURNAL

Published Monthly **Official Organ of the Medical Society of the State of Pennsylvania**

CYRUS LEE STEVENS, A.M., M.D., Editor

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All communications should be addressed to the PENNSYLVANIA MEDICAL JOURNAL, Athens, Pa.

The Medical Society of the State of Pennsylvania does not assume responsibility for any statements or opinions published in this Journal.

ATHENS, PA., AUGUST, 1918

ARE YOU ONE OF THOSE WHO SHOULD APPLY FOR COMMISSION IN THE M. R C. OF THE ARMY OR NAVY? IF NOT, BUY ANOTHER LIBERTY BOND

MEDICAL ORGANIZATION

The American Medical Association is organized along the most democratic and representative lines. No profession in this or in any other country is more thoroughly and efficiently organized than the American Medical Association. The unit of the organization is the county medical society. It is the avowed purpose of the county society to receive into its membership all reputable practitioners who are legally qualified to practice medicine. The county medical society is a democratic organization. It is not, nor is it intended to be, a select and exclusive medical society. Its functions are educational and social. It exists for the purpose of using the united efforts of the physicians of that county for the benefit of the people and for the education of its members. Any county society that is not democratic and representative is not fulfilling its proper function. By virtue of membership in the county society the physician becomes a member of his state medical society and of the national society — the American Medical Association.

During the first half century of its existence, the American Medical Association was a rather loosely organized body. It was founded for the special purpose of elevating the standards of medical education and practice. Its ideals were high, and it accomplished a great deal of good. Not, however, until its reorganization in 1901 on broad democratic and representative lines, did it become in fact the organized medical profession of the country. The American Medical Association is not sectarian, but is broad enough to include in its membership all licensed physicians who honorably practice scientific medicine.—Arthur Dean Bevan, M.D., in his address as President of the American Medical Association, Chicago, June 11, 1918.

SOMETHING EACH PHYSICIAN CAN DO

Have you written a letter to any of the physicians who have put on Uncle Sam's uniform and gone into training, entered active service on this side of the ocean or gone "over there"? If not, hunt up the military address of some physician you know and write him a cheerful, newsy letter. If one of your neighbors with whom you were not overly familiar is in the service be sure to write him a real chummy letter. Tell him any medical, social or political gossip that is not likely to get in the newspaper. We at home are busy, of course, but we do not need the encouragement that the boys in the training camp need these hot days, nor the cheer and sympathy that the boys in the trenches need to help them to continue in their arduous and dangerous tasks. Put yourself in his place for a few minutes and think how you would like to receive a letter from a physician at home, giving items that he would get in no other way and, what is worth much more, showing an interest in the work of the medical soldier. Make it cheerful, no complaints, not too much sympathy (the letter of itself will show the sympathy), just help carry on.

The Journal is sent to all members in the service when their full military address is given, changing the address as often as necessary. Will our secretaries and members kindly send in the military address of any physicians in the service?

COMPULSORY SOCIETY ATTENDANCE

Attention is directed to an excerpt from the *Bucks County Medical Monthly,* entitled "Semi-Compulsory Attendance," which will be found under Bulletin Excerpts. Several of the county societies have at some time, either by resolution or by-law, established a penalty payable by fine or expulsion for failure on the part of a member to attend the meetings of the society at least once or twice during the year. None of these attempts have proved helpful.

Those who do not attend meetings may roughly be divided into four classes: (1) A few are self-satisfied and feel that they can learn nothing from association with others. (2) Some, though well informed, are naturally retiring and shrink from social contact. (3) More stay at home to catch stray calls and patients who would naturally go to those members who are in attendance at society meetings. (4) Probably the largest class of nonattendants are those who hesitate to come in contact with their professional brethren either because they know that they themselves are not honest competitors, or because they fear to show their lack of scientific attainments and are too lazy to study.

No physician can attend every medical meeting, and, even when one has carefully planned to attend a certain meeting, something is liable at the last moment to prevent his attendance. However, it would seem that any member might attend at least one or two meetings a year. The first essential for a large and general attendance is live meetings. Who wants to listen to the splitting of parliamentary hairs or the airing of personal jealousies? The second requisite is cordiality. "Molasses will catch more flies than vinegar."

No matter how interesting, valuable and cordial the meetings may be, there are some who will not attend, but no one is benefited by dropping such members from the society. The physician who is enrolled in the organization and pays his dues is of more help to the profession and his community, even though he never attends a meeting of his society, than he would be as a nonmember. He loses more by not attending the meeting of his society than the members in attendance would gain by his presence.

ANNUAL COMMERCIAL EXHIBIT

The annual commercial exhibit of our state society has a reputation that even in war times must be maintained. If we should have one or two indifferent years, if we should allow the interest heretofore displayed to drop away, it would take years to build a clientele such as we now enjoy.

When an exhibitor rents space he expects just one thing, interest. Not so much a monetary interest, but a genuine therapeutic interest in the products he has on display.

The physician cannot afford to permit his equipment to become antiquated. At any time he may require special equipment for a particular case, and immediately he remembers what he has seen at the exhibit. He has had a comparative study of various articles, knows the best, and where to secure it. Or, he sees the book he needs, the instrument he lacks, the electrical equipment that would give him a wider field, and, as a rule, when he orders at the annual commercial exhibit he receives the advantage of a liberal cash discount.

It must be remembered that every exhibitor contributes toward a fund that permits us to conduct our annual scientific and business session at a very low cost to the members of the society. Last year, for instance, every member attending the Pittsburgh Session would have had an extra assessment of about $3 had it not been that our exhibitors believe in us and in the value of our exhibit.

Uncle Sam has and needs a lot of us; therefore the department of exhibits needs the attendance and interest of every possible member. For those not in the service, there will be no long vacation this year. The few days in Philadelphia will give the needed rest. It is to be a big house party; there will be no hustling from place to place, no rushing from meeting to meeting; everything will be on the second floor of the Bellevue-Stratford. In fact, just the quiet stimulating atmosphere of an excellent scientific program, and that interesting and instructive stroll through the commercial exhibit. Make a big effort to be in Philadelphia the last week in September. W. H. C.

THE PHILADELPHIA SESSION

The preliminary program of the Sixty-Eighth Annual Session of the Medical Society of the State of Pennsylvania, which will be held at the Bellevue-Stratford Hotel, Philadelphia, September 24, 25 and 26, will be found in this number. All members of sister medical societies are cordially invited to attend any or all the meetings on these days. Look over the program and plan to meet with us.

WORKMEN'S COMPENSATION. HEALTH INSURANCE

Attention is called to the papers read at the Conference of Industrial Physicians and Surgeons last April, and published in this number of The Journal, especially to those of the afternoon meeting. Members of the House of Delegates should give special attention to the papers and discussions on the Workmen's Compensation Law, studying this subject, that they may be ready to take appropriate action at the session in Philadelphia in September. So, too, they should improve every opportunity to learn all that they can about Health Insurance, as this measure will evidently come before the next legislature and our state society should be prepared to take some intelligent action at Philadelphia.

PROGRAM OF THE SECTION ON MEDICINE

The program for the Section on Medicine this year should appeal to every physician who is interested in internal medicine or who is engaged in general practice. In studying the subject matter, it will be noted that the subjects are all very important and liable to engage the attention of the busy practitioner at any time. An effort was made to make practical application of the scientific study of the various subjects and as a consequence you will find in the personnel of the program not only the laboratory worker and the practical clinician representing the various medical faculties of the state, as well as a few invited guests, but a large representation of prominent physicians throughout the state, some as authors of papers and others as discussors. This wide-spread representation in the personnel we trust will be an incentive to many physicians to make a special effort to attend the annual session and to come especially prepared to take an active part in the discussion. There are many splendid practitioners, keen observers, who make valuable observations from time to time, but who, because of modesty, never put in writing nor disclose in discussion their observations. Let every physician feel that it is incumbent on him as a loyal, patriotic practitioner to make known the special knowledge that he may have acquired and come and add what he can to the interest of the program. G. E. H.

PHILADELPHIA BY AUTO

During the last week of September many automobiles belonging to physicians of Pennsylvania will be seen headed toward Philadelphia, for roads in every direction lead to the meeting place of the state society. There are several first-class garages within two or three blocks of the Bellevue-Stratford where charges will be as follows: Storage for short time, fifty cents; storage per night without washing, $1; storage per night with washing, $1.50.

OUR ADVERTISING PAGES

The Cutter Laboratory of Berkeley, Calif., has for twenty years been serving the physicians of the country; but in order better to meet the requirements of the profession they have reorganized and enlarged their Chicago office, and are better prepared to serve the interests of their patrons. The Journal has accepted their page announcement, and is printing the same in this issue. We bespeak for the

Cutter Laboratory a share of our readers' patronage.

The increasing cost of publication and the extra postage under the amended postal laws effective last month places THE JOURNAL, its readers and the society under renewed obligations to our advertisers. Without the income derived from advertisements it would be impossible to bring to our members the monthly visits of THE JOURNAL. We, therefore, urge our readers to patronize our advertisers and this we can the more conscientiously ask since only worthy products are accepted for our advertising pages.

PAYMENT OF PER CAPITA ASSESSMENT

The *per capita* assessment for the year 1918 has been received from component county societies since June 21, as acknowledged on page 639 of the July JOURNAL, as given below. The figures in the first column indicate the county society number and those in the second column the state society number.

1918				
6/24	Lehigh	96–97	6687–6688	$ 5.50
6/26	Philadelphia	1761–1770	6689–6698	27.50
7/ 1	Franklin	56	6699	2.75
	Bucks	86	6700	2.75
7/ 2	Cumberland	39	6701	2.75
7/ 5	Lawrence	57	6702	2.75
	Franklin	57	6703	2.75
	Allegheny	509–512, 1050–1052, 1055–1058	6704–6714	30.25
	Bradford	47	(See May 1, previously remitted, now paid)	2.75
7/ 6	Lancaster	134	6715	2.75
7/ 9	Lycoming	101–102	6716–6717	5.50
7/12	Beaver	67	6718	2.75
	Armstrong	62	6719	2.75
	Monroe	22	6720	2.75
	Allegheny	1059–1060, 1062–1069	6721–6730	27.50
7/16	Franklin	58	6731	2.75
7/18	Delaware	90	6732	2.75
7/20	Somerset	44	6733	2.75
7/24	Lackawanna	193	6734	2.75
	Chester	87–89	6735–6737	8.25
7/25	Allegheny	1070–1071	6738–6739	5.50

CHANGES TO MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported since the list was printed in the June JOURNAL, up to and including July 27:

ALLEGHENY COUNTY: *New Members*—Walter G. Aughenbaugh, Holland H. Donaldson, William C. Hall, James Hodgkiss, William E. Kramer, Samuel H. Lebeau, Myer B. Lichtenstein, E. Bosworth McCready, Mary A. Naylor, Simon H. Ratner, Daniel A. Ressa, Nicholas L. Rosenberg, Max G. Schlotbom, Jackson B. Shepard, Pittsburgh; Charles S. Caldwell, Swissvale; William R. Deemer, Thomas H. Manley, Jr., William H. Wood, Tarentum; Francis J. Madden, Duquesne; Joseph A. Lafferty, McKees Rocks; John M. Patterson, Imperial; C. E. Shultz, Castle Shannon; Frank F. Sumney, Dravosburg. *Deaths*—Charles F. Butler (Medico-Chirurgical Coll., Philadelphia, '15) in Pittsburgh, June 4, aged 23; John Conrad Lemmer (Univ. of Maryland, Baltimore, '85) in Wilkinsburg, July 9, aged 56. *Removal*—Mark A. Bradford from Pittsburgh to 905 Garrett St., Homewood.

ARMSTRONG COUNTY: *New Member*—John C. Hunter, Apollo. *Death*—Robert G. Ralston (Jefferson Med. Coll., '60) in Cowansville, May 23, aged 88.

BEAVER COUNTY: *New Member*—James R. Gormley, Monaca.

BUCKS COUNTY: *New Member*—John Simpson Carter, Bristol. *Removal*—James W. Harper from Pittsburgh to Tullytown.

CHESTER COUNTY: *New Members*—A. Wayne Baugh, Paoli; Laban T. Bremerman, Downingtown; Walter Webb, West Chester. *Removal*—C. Norwood Wherry from Monongahela (Washington County) to 738 Walnut St., Columbia (Lancaster County).

CUMBERLAND COUNTY: *New Member*—Harvey B. Bashore, West Fairview.

DAUPHIN COUNTY: *Removals*—Claude J. B. Flowers from Harrisburg to Elizabethville; George L. Laverty from Harrisburg to 208 Ridgewood Rd., Roland Park, Md.; Joseph W. Shaffer from Elizabethville to Millville (Columbia County).

DELAWARE COUNTY: *New Member*—David Dalton, Sharon Hill.

FRANKLIN COUNTY: *New Members*—John C. Greenewalt, Chambersburg; Charles A. Hartzell, Fayetteville; Harry C. McClain, Hustontown.

LACKAWANNA COUNTY: *New Member*—Sidney W. Rivenburg, Clifford (Susquehanna County). *Removal*—Harvey O. Rohrbach from Mill City (Wyoming County) to 500 E. Broad St., Bethlehem (Northampton County).

LANCASTER COUNTY: *New Member*—Edward V. Kyle, Christiana.

LAWRENCE COUNTY: *New Member*—Charles B. Hunt, New Castle.

LUZERNE COUNTY: *Removal*—P. A. McLaughlin from Kingston to 34 S. Washington St., Wilkes-Barre.

LYCOMING COUNTY: *New Members*—Carl G. Renn, Lairdsville; R. H. Renn, Williamsport. *Death*—John Senn (Coll. of Phys. and Surg., Homeopathic, Buffalo, '82) in Williamsport, June 17, aged 71. *Removal*—J. Harrison Fisher from Williamsport to Blandburg (Cambria County).

MONROE COUNTY: *New Member*—Mary G. Erdman, Stroudsburg.

PHILADELPHIA COUNTY: *Deaths*—John J. A. Doyle (Jefferson Med. Coll., '97) of Philadelphia, in Atlantic City, N. J., July 6, from the effects of overwork, aged 43; S. Leslie West (Jefferson Med. Coll., '68) in Philadelphia, June 26, aged 73. *Removals*—Fannie C. Haines from Philadelphia to State Hospital, Taunton, Mass.; Harold W. How from Philadelphia to P. O. Box 172, Bryn Mawr (Montgomery County); Howard S. Kinne from Williamsport (Lycoming County) to 112 North 18th St., Philadelphia; Frederick C. Narr from Philadelphia to Passavant Hospital, Pittsburgh (Allegheny County).

Somerset County: *New Member*—Harry B. Smith, Acosta.

Washington County: *Removal*—Harry A. Whyte from Washington to 206 Idaho St., Farrell (Mercer County).

Westmoreland County: *Removal*—Lou Murray Mitchell from Pricedale to 6323 Douglas St., Pittsburgh (Allegheny County).

Wyoming County: *Removal*—Frank A. Detrick from Nicholson to Clarks Summit (Lackawanna County).

York County: *Removal*—Robert L. Ellis from York to Yoe.

STATE NEWS ITEMS

MARRIED

Dr. Thomas Gustin Aller, Philadelphia, and Miss Natalie E. Walton, Torresdale, June 1.

Dr. George Edward Pfahler, Philadelphia, and Miss Muriel Wilkes Bennett, at Brantford, Ontario. Canada, July 10.

DIED

Dr. Robert Simpson (Univ. of Pennsylvania, '74) in Philadelphia, June 18, aged 75.

Dr. John Shriver Wentz (Univ. of Pennsylvania, '58) in Philadelphia, July 1, aged 81.

Dr. Samuel C. Meredith (Jefferson Med. Coll., '88) in Philadelphia, July 12, aged 63.

Dr. Edwin G. Cowperthwaite (Hahnemann Med. Coll., Philadelphia, '95) in Philadelphia, June 11, aged 44.

Dr. Roger J. Levering (license, continuous practice, Monroe County, Pa., '82) in Stroudsburg, recently, aged 82.

Dr. Charles L. Townley (Western Reserve Univ. Cleveland, '84) in Erie, July 7, from acute gastritis, aged 65.

Dr. David Mays Vogt (Univ. of Pennsylvania) of Newmanstown, was injured by the overturning of his automobile near Milburn, N. J., and died at Summit, N. J., May 30, from his injuries.

Dr. Richard Franklin Hill (Hahnemann Med. Coll. and Hosp. of Philadelphia, '09) of Philadelphia, in Washington, D. C., July 2, aged 31.

ITEMS

Lieut. David Reynolds Morgan, Edwardsville, has won the French war cross.

Dr. Ray R. Willoughby has been appointed assistant medical inspector, bureau of health.

Dr. John I. VanWert, Patton, who has been sick since January, is reported much improved.

Major James G. Flynn, Ridgway, has been transferred from Camp Bowie, Fort Worth, Tex., to Fort Sam Houston, Tex.

Dr. Jay Frank Schamberg has been elected Professor of Dermatology and Syphilology at Jefferson Medical College to succeed Dr. Henry W. Stelwagon resigned.

Dr. William Wayne Babcock, Philadelphia, has been promoted to Lieutenant-Colonel, and is stationed at the U. S. General Base Hospital No. 6, Fort McPherson, Atlanta, Ga.

State Pharmacy Examinations.—Eighty-nine of the 131 applicants for pharmacists passed the State Board. There were 150 who were examined for assistant pharmacists, and eighty-eight passed.

The Lancaster County Doctors have decided to increase their fees as the high cost of living and transportation make such increase absolutely necessary. No visits will be made for less than $1.50.

Dr. Gwilym G. Davis, Philadelphia, recently deceased, bequeathed $3,000 to the Hospital of the University of Pennsylvania, for the Children's Orthopedic Ward, and $500 to the College of Physicians of Philadelphia.

Dr. Edward R. Walters, formerly director of health and charities at Pittsburgh, has been appointed medical adviser to the state workmen's compensation board of the western Pennsylvania district, with headquarters at Pittsburgh.

Dr. Albert E. Blackburn, Philadelphia, was on July 25, reappointed by Governor Brumbaugh a member of the State Board of Examiners for Registration of Nurses. He has been a member of the board since its establishment in 1909.

Dr. Horace C. Kinzer, Secretary of the Lancaster City and County Medical Society, has received his commission as First Lieutenant and was ordered to report at Camp Upton, L. I., N. Y., July 15. Dr. Tobias C. Shookers, Lancaster, is the new secretary.

Doctors All Volunteer.—Drs. D. F. Heilman, C. W. Rice, and C. E. Rutter of Northumberland have applied for commissions. If all three are accepted, the town will be without a physician. Dr. Stoddard S. Burg of Northumberland is already in the service.

Dr. Roscoe F. Mauser, Fountain Springs, former resident surgeon at the Shamokin City Hospital, but who has been in service in France for two years, first with the French ambulance corps and later with the American ambulance corps, has been awarded the Croix de Guerre.

A Proposed Basis for a Dietary for Hospitals for the Insane to Meet War Conditions, by H. J. Sommer, M.D., superintendent of the Blair County Hospital for the Insane, and P. Saha, M.D., assistant physician, is a pamphlet printed and distributed by authority of the Directors of the Blair County Hospital for Insane, Hollidaysburg.

The Pennsylvania Academy of Fine Arts has given four ambulances for the foreign field and are now planning to give six additional machines, the names of which are: James MacNeil Whistler, Auguste Rodin, Earl Kitchener, Cardinal Mercier, Admiral Sims' Fleet and General Pershing.

Dr. Thomas B. Kern, Bethlehem, entered the Medical Reserve Corps last August, was sent to England, spent some time in Liverpool and London, and at a base hospital in Aberdeen, Scotland. He was then sent to France and stationed with the First North Staffordshire Regiment. On March 21 he was reported missing and a month later located in a German prison camp.

Baby Saving Exhibit.—Two traveling teaching exhibits, under the direction of the state health department at Harrisburg, have been opened, one at Willow Grove Park, Philadelphia, and the other at Pittsburgh, to instruct the public on many important matters relating to health hygiene and sanitation, particularly toward baby saving. The exhibit at Willow Grove is in charge of Dr. William C. Miller, Harrisburg.

Quarantine at Allentown.—On account of the epidemic of measles in Allentown, a quarantine has been ordered affecting all children under 16 years of age. They are forbidden to attend Sunday school, church, or to go to any such public places as playgrounds, moving picture shows and parks. The playground system, which was to have opened, July 4, has been postponed. During June there were 789 cases of measles in the city.

Byberry Buildings for Base Hospital.—Five large structures, an administration building and four dormitories, forming the group of buildings now under construction for the use of the city's insane, at Byberry, have been tendered by the city, through Mayor Smith and Director Wilmer Krusen to the government as a military base reconstruction hospital. The offer was accepted by the Surgeon-General. The buildings are surrounded by a tract of land containing 200 acres. The four dormitory buildings will have accommodation for about 800 patients. Each building is about 50 per cent. completed, and fully 95 per cent. of the materials for finishing the structures is now on the ground. The cost of this particular group of buildings is $1,250,000.

Egg Substitutes.—Charles H. Lawall, Pennsylvania Department of Agriculture, 1918, 1, No. 7, says that "practically every one" of the egg substitutes is "chiefly cornstarch colored with coal tar." His conclusions are as follows: First, the brightest light of publicity should be shed on these products, and the heaviest weight of official authority should be invoked to discourage their manufacture and sale. Second, they afford an opportunity for unpatriotic profiteering, combined with the development of the art of camouflage to the point of perfection. Third, their names are deceptive; their composition in no wise resembles that of egg; the presence of color, in those where it is used, is a fraud, and the claims as to replacing value are either deliberate misstatements or ambiguous phrases. Finally, egg substitutes serve no purpose that cannot be served just as satisfactorily and much more cheaply by articles in daily use in every household.

Boric Acid Not Allowed in Canning.—James Foust, Pennsylvania State Dairy and Food Commissioner, announced on July 24 that the opinion rendered by the superior court would have a far-reaching effect in the enforcement of the food law and that it will drive canning compounds out of Pennsylvania. He also said that any merchant having canning compounds had better get them off their shelves and that manufacturers and wholesale dealers must withdraw all such products from Pennsylvania to protect themselves against prosecution. The superior court in its opinion reverses Judge Bailey in a Bedford County case against J. R. Fulton for violation of the pure food law in selling Mrs. Price's Canning Compound and describes the compound as being boric acid, nothing more or nothing less. The food law specifically prohibits the use of boric acid to preserve food. The fraud in this case was that boric acid was used in the canning compound and sold under a coined name.

Appeal for Nurses.—The following appeal has been mailed to the physicians of Philadelphia and vicinity:

"Your approval and cooperation are earnestly asked to help meet the urgent national necessity for enrolling trained nurses for service at home and abroad.

"The Red Cross is carrying on a national campaign throughout the country appealing for an enrolment of 25,000 graduate nurses. The quota for the Southeastern Pennsylvania Chapter of the Red Cross, covering five counties, is 400.

"Other communities are doing their part.

"Each of ours must do the same.

"Where you can help practically is to urge all nurses of your acquaintance doing public or private work which is not strictly a necessity to enroll in the Red Cross nursing corps.

"Obviously many young women could be thus released for national service, here or abroad, and in many instances those too old for active service could take their places.

"The country needs nurses just as it needs soldiers and sailors and doctors. Will you and your medical friends help in this campaign? And will you emphasize the importance of its success among your patients and the laity in general?

"W W. Keen, M.D.
"Edward Martin, M.D.
"Hobart A. Hare, M.D.
"Henry D. Jump, M.D.
"John G. Clark, M.D.
"Wilmer Krusen, M.D."

GENERAL NEWS ITEMS

Buy Liberty Bonds and help pay for your substitute "over there."

Dr. David Linn Edsall has been appointed dean of the Harvard Medical School.

Removing Superfluous Hair with an electric needle is practicing medicine, according to a recent decision of the New York Supreme Court.

Dr. J. Milton Griscom, Philadelphia, has been elected secretary of the Wills Hospital Ophthalmic Society, succeeding Dr. Harold W. How, resigned.

The Vacuum Oil Company, Paulsboro, N. J., is building a large hospital where its workmen injured at the plant are to be treated without cost until fully recovered.

Medical School for West Africa.—The French Government will establish a medical school at Dakak in French West Africa, to train native practitioners and midwives.

Dr. Abraham Jacobi has accepted the office of honorary president of the Friends of German Democracy, an organization of Americans, mostly of German descent, who favor the destruction of Hohenzollern rule.

Dr. Arthur L. Blunt, recently convicted of dispensing narcotics, must serve five years in the Leavenworth Penitentiary and pay a fine of $12,000, according to the decision of the United States Court of Appeals at Chicago, July 24.

Carry On, a magazine on the Reconstruction of Disabled Soldiers and Sailors, made its appearance in June. It is edited by the Office of the Surgeon-General, U. S. Army, and published for the Surgeon General by the American Red Cross.

John W. Sterling, a New York lawyer, left a fortune of $20,000,000. Of this, $7,500 was given to the Presbyterian Hospital of New York, $10,000 to the Bridgeport Hospital, and $1,000,000 to the Miriam A. Osborn Memorial Home at Rye, N. Y.

Colored Woman Doctor Joins Red Cross.—Dr. Mary L. Brown has been commissioned by the Red Cross to go to France. Dr. Brown took the medical course at Howard University, Washington, D. C., and did postgraduate work at Edinburgh, Scotland.

Whooping Cough Patients to Wear Yellow Arm Bands.—Yellow arm bands with the words "Whooping Cough" printed in black letters are to be worn by the afflicted children of Detroit, and their houses will be placarded. Theater proprietors are ordered not to admit the wearers of arm bands.

War Hospital in Detroit.—Henry Ford is spending $3,000,000 on the erection of a hospital which will bear his name, and to be used for American soldiers wounded overseas. The hospital will be located on a 20-acre tract on Grand Boulevard; will be a four-story structure, excepting the center, which will have six stories; will have forty porches, 1,300 windows and a roof garden.

Studying Poliomyelitis in Africa.—At the request of the South African Institute for Medical Research, the Rockefeller Institute for Medical Research has arranged with the Vermont State Department of

Health to release Dr. Edward Taylor for temporary service in Johannesburg, South Africa, in order that he may advise the government there in respect to an epidemic of poliomyelitis prevailing in that region.

Council on Pharmacy and Chemistry.—Since the last report the following articles have been accepted for inclusion in New and Nonofficial Remedies: Antipneumococcic serum, Type 1, Cutter Laboratory; Mead's dextri-maltose, No. 2 and No. 3, Mead Johnson and Company; antipneumococcic serum, Type 1, antipneumococcic serum, polyvalent, H. K. Mulford Company.

Death Rate in Large Cities.—The Bureau of Census report for the week ending July 20 gives the following death rates, stillbirths excluded, per one thousand estimated population: Nashville, 22.5; New Orleans, 22.1; Baltimore and Washington, 19.3; Richmond, 17.7; Lowell, 17.3; Birmingham and Philadelphia, 16.5; Dayton, 16.2; Memphis, 16.1; Providence, 15.6; Syracuse, 15.5; New Haven, 15.1; Fall River, 14.9; San Francisco, 14.7; Cincinnati, Cleveland and Pittsburgh, 14.

New Royal Park Chosen for Red Cross Gift Hospital. — The proposal to establish an American Red Cross hospital in the grounds of Windsor Castle has been discarded, owing to the difficulties that would be encountered in draining the soil. The king, therefore, asked the American army authorities to choose a suitable site in any of the other royal parks. The high ground in Richmond Park, overlooking the Thames, within seven miles of the center of London has been selected. Construction will be begun immediately by the British Red Cross, which is giving the completed hospital to the Americans as a token of hospitality.

Status of Contract Surgeon.—A contract surgeon is not a military officer and has no military rank; he is not a part of the Military Establishment but is merely a civilian in the employ of the United States by contract for his personal services as a medical attendant to the troops (Dig. Ops. J. A. G. 97). Accordingly he is not entitled to the benefits of the war-risk insurance act of Oct. 6, 1917 (40 Stat., 398); nor is he an officer within the meaning of Section 9 of the selective draft act of May 18, 1917 (40 Stat., 76), authorizing the examination of officers by boards appointed to determine their fitness for service. (Ops. J. A. G. 211.26, March 7, 1918.)

Individual Responsibility.—This war is to be won not by one man or one thousand men or one million men, or one million people. It is to be won by the united efforts of the individuals of many nations. Every American citizen has an individual duty to perform, an individual share of the responsibility. The more powerful and effective the American forces are the shorter will be the war, and the shorter the war the fewer lives lost, the greater the number of American soldiers who will return home victorious. Every American who economizes in consumption of material, who increases production, who saves and lends savings to the Government, does something to help win the war.

Control of Venereal Diseases.—Ohio is the thirteenth state to centralize its activities for the control of venereal diseases by placing them under a separate bureau in its state health department, according to a statement from the Ohio State Department of Health. Such a bureau has been in operation for several months and is carrying on educational work throughout the state and is encouraging the local health departments of the state to enlist in the campaign. The new venereal disease regulations that went into effect, July 1, are expected to aid in the campaign by increasing the health officials' knowledge of the prevalence of venereal infections and by providing for the isolation of infected persons who are likely to menace the public health. The new regulations require reporting of all cases of venereal diseases, with name of patient and probable source of infection, by physicians, dentists, hospital superintendents and heads of various institutions. Medical examination of prostitutes and others suspected of having a venereal disease is provided for, and quarantine of diseased persons, where such quarantine is deemed necessary by the state commissioner of health, is required.

Health Insurance in Political Program.—The labor league of New York City is preparing to take a definite stand in the coming fall campaign to insure the welfare of its members and their fellow workers in New York state. In the program prepared for presentation at the Republican convention this organization comes out definitely as favoring the establishment of state-administered health insurance and the creation of a bureau of sickness prevention and health protection within the state labor departments; for the erection and maintenance of a tuberculosis sanatorium in each county, with county management and state supervision, and for old age pensions for citizens who at 60 years of age are without incomes and have been residents of the state for twenty-five years.

Standards Different Heretofore.—Heretofore the physical standards of the three armies have differed and instances have been noted where men who have been rejected for service by the recruiting officers of the Regular Army have been accepted for military service by draft board physicians. Under the new standards this will not be possible unless the disqualifying defect be subsequently removed. The rule for all three armies is that to make a good soldier a man must be able to see well, have comparatively good hearing, his heart must be able to stand the stress of physical exertion, he must be intelligent enough to understand and execute military maneuvers, obey commands, and protect himself, and must be able to transport himself by walking as the exigencies of military life may demand. The exceptions made to the foregoing general rule are in the case of the men accepted for special and limited service.

Escape from Germany of Author of "Biology of War."—*The Journal of the American Medical Association* mentioned, Jan. 26, 1918, p. 252, that Dr. G. F. Nicolai, professor of physiology at the University of Berlin, had stated in his recent book, "The Biology of War," that he had been asked by a highly respected and prominent German official as to the feasibility of making bombshells so they would scatter cholera and plague germs. Nicolai mentioned this as one instance, among others, of the warping of the conceptions of scientists, military men and large circles of the populace to the effect that war justifies everything. The news item quoted from the *Observer* of Berne and the *Progrès Médical* of Paris that Professor Nicolai had been condemned to five months' imprisonment. Now an Associated Press dispatch of June 24 states that Professor Nicolai was one of the men who escaped from Germany last week in airplanes, landing in Denmark.

Medical Entente with England Is Proposed.—The London *Times,* commenting on the cordial reception in America of the British Medical Commission, says: "It is well, in the great war against disease, which is now in its opening stages, that the two peoples should stand side by side. American medicine has much to give, and the same can be said of our own profession. The time is opportune for the cultivation of a closer relationship and the creation of new facilities for study, the endowment of research fellowships on both sides of the Atlantic and the interchange of scientific papers on schemes of work." Discussing the subject of both British and American army physicians engaged in valuable pathological work here, it has been suggested that it would be timely that the bar against British or American physicians practicing temporarily or permanently in the other country should be abolished; that diplomas of recognized schools of medicine should be valid on both sides of the Atlantic.

American Climatological and Clinical Association at its thirty-fifth annual meeting in Boston, June 6, elected officers for the ensuing year as follows: President, Dr. Guy Hinsdale, Hot Springs, Va.; Vice Presidents, Drs. J. H. Pratt, Boston, and Hugh Kinghorn, Saranac Lake, N. Y.; Secretary and Treasurer, Dr. A. K. Stone, Boston. The following resolutions were passed:

Whereas, Major-Gen. William C. Gorgas, Surgeon-General of the Army, will reach in November of this year the age of compulsory retirement under existing law unless he be continued in duty by the President of the United States; and,

Whereas, The record of achievement of General Gorgas in Cuba, in Panama and in the present World War has earned him the admiration and confidence of the medical profession as an executive, a scientist and as a man, and we believe that no other member of the medical profession possesses so unreservedly this admiration and confidence; therefore, be it

Resolved, That the American Climatological and Clinical Association trusts that the President will deem it right and proper to continue General Gorgas in his present office until the successful and victorious close of the present war for liberty, humanity and righteousness.

Resolved, That a copy of these resolutions be forwarded to the President.

Pa. Med.—Aug.—State News Items—7-16-18—French

The Graduate School of Medicine of the University of Pennsylvania was organized on July 1. The former faculty of the Medico-Chirurgical College and Hospital and that of the Philadelphia Polyclinic constitute the faculty of the new department. The unit to be first installed is the Polyclinic Section Hospital at Eighteenth and Lombard Streets. This will be enlarged to contain 300 ward beds, nearly three times its present ward capacity. Plans are being prepared by a well-known architect for the construction of an elaborate teaching hospital. The Polyclinic is situated in a populous district, midway between the main University group and its Phipps Tuberculosis Institute. The opportunity for clinical teaching will be wide because of the public's long familiarity with its dispensary and emergency services. The next step will be the erection of the Medico-Chirurgical unit on the University campus in West Philadelphia. Here will be carried on the research department and the hospital for the treatment of private-room patients. It begins to look as if Philadelphia's place in the front rank of medical educational centers would be assured. Large endowments from medical alumni and other citizens are, however, necessary to enable the trustees to carry out the extensive plans they have in view.

BULLETIN EXCERPTS

MEDICAL MONTHLY, BUCKS

Semi-Compulsory Attendance

Apropos of the movement that was started to drop from membership members who were absent one-half of the meetings of the year shows a disposition on the part of the active members of the society to resent our slackers' want of interest. While it is annoying and unjust to the society for members to be in affiliation and partake of the legal and standing advantages of the society, when you take into consideration what the absentees miss by nonattendance, are they not sufficiently forfeited by their absence? We are aware of the source of discontent, the *causus belli,* but, keep in mind, my friend, every evil works its own cure, and the person or persons who abstract without pay, eventually pay the price. Your editor endorses the position taken in the subjoined letter from Dr. Osborne:

Morrisville, Bucks County, Pa.,
June 12, 1918.

My Dear Dr. Carrell:—I was surprised at our last meeting to hear it announced that a resolution would be offered to deprive of their membership in the society any who might fail to be present at two stated meetings during the year. This seems to me a move both unwise and inadvisable, for the following reasons:

1. It would be an arbitrary action, for, after all, membership is voluntary—that is, not essential to legal standing in the profession.
2. It would bear hard on some of the older members, and certainly would be showing them but little respect.
3. Men would feel that they were being treated like children, and would certainly resent such treatment, even though, for other reasons, they might be unwilling to resign.
4. It would affect the society, not only numerically but financially.
5. It would be undignified, and therefore unworthy of our great and noble profession.
6. Moral suasion and appeals to professional devotion are the only appropriate remedies.

There might be, perhaps, a sort of ethical precept established, and printed regularly in the Monthly to the effect that the society expects every member to make an effort to attend at least two meetings during the year.

Trusting that you will agree with me as to the unwisdom and inadvisability of passing such a resolution, or even offering it, I remain, with kind regards, sincerely yours, Richard H. G. Osborne.

BOOKS RECEIVED

Books received are acknowledged in this column, and such acknowledgement must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

Transactions of the Thirty-Ninth Annual Meeting of the American Laryngological Association, held at Atlantic City, N. J., May 28-30, 1917. New York: Published by the Association.

A Treatise on Cystoscopy and Urethroscopy. By Georges Luys, M.D., Former Intern, Hospital of Paris; Former Assistant in the Department of Urinary Diseases at the Lariboisiere Hospital; Laureate of the Faculty of the Academy of Medicine. Translated and edited with additions by Abr. L. Wolbarst, M.D., New York; Cystoscopist, Beth Israel Hospital; Consulting Urologist, Central Islip and Manhattan State Hospitals; Genito-Urinary Surgeon, West Side German Dispensary and Hospital; Author of "Gonorrhea in the Male," etc. With 217 figures in the text and 76 drawings from original water colors. St. Louis: C. V. Mosby Company, 1918. Price, $7.50.

The Hodgen Wire Cradle Extension Suspension Splint. The Exemplification of This Splint with Other Helpful Appliances in the Treatment of Fractures and Wounds of the Extremities and Its Application in Both Civil and War Practice. By Frank G. Nifong, M.D., F.A.C.S. With an Introduction by Harvey G. Mudd, M.D., F.A.C.S. With 124 illustrations. St. Louis: C. V. Mosby Company, 1918. Price, $3.00.

BOOK REVIEWS

COLLECTED PAPERS IN 1917 OF THE MAYO CLINIC, Rochester, Minn. Octavo, 866 pages; 331 illustrations. Philadelphia and London: W. B. Saunders Company. Cloth, $6.50 net.

The annual issue of the papers published during a preceding year, by the personnel of the Mayo Clinic (now the graduate medical department of the University of Minnesota), is an interesting event and preserves its contemporaneous literature in form for library use. The nine successive volumes have been an astonishing evidence of the organizing ability of the two surgeons, who have made the little town of Rochester famous. The octavo book of over 800 pages now in hand is no exception to the former numbers. It contains over eighty essays on up-to-date topics and furnishes the reader with medical, pathological and surgical food for thought. The wide range of its professional content and the great amount of clinical material analyzed by its contributors show the advantage of team work in surgery, especially when combined with a generous policy toward subordinates and a high degree of professional enthusiasm and intelligence. There are noteworthy articles for study by physicians as well as surgeons. Those also who are interested in industrial affections and accidents will find their time well spent when used for reading the well illustrated papers in this collection. J. B. R.

THE TREATMENT OF WAR WOUNDS. By W. W. Keen, M.D., Emeritus Professor of Surgery, Jefferson Medical College, Philadelphia. Second Edition; 12mo; 276 pages; illustrated. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, $2.00 net.

The Journal recently reviewed Moynihan's American Addresses on War Surgery and opined that that small volume had great value as a working guide for surgeons. Dr. Keen's book of like size and make-up is a fitting companion for the English surgeon's production. Good American churchmen carry on Sundays the well-known book of Common Prayer and the Hymnal of the Protestant Episcopal Church in separable leather bindings linked together. American surgeons, willing to carry similarly bound copies of Moynihan and Keen every day of the week, would become not only good but successful. The two books deal necessarily with the same general topics, but the British author's was intended for a mixed audience of lay and medical composition. That of the ever-active Keen was meant for professional perusal by his hundreds of grateful pupils in America and his hosts of surgical admirers the world over.

The two volumes are in a sense, therefore, complements one to the other. They bring from those astounding vivisectal laboratories, euphemistically called military hospitals, the results or an unexampled opportunity for study and repair of the barbaric mutilations of the human body caused by inhuman strife. An offset to the horror of this situation is the fact that the knowledge of surgery gained from war is available in the treatment of industrial injuries acquired in the civilizing pursuits of peace. In recent weeks, the writer has been surprised in civilian hospitals at the similarity of discrete cases of construction, railroad and automobile accidents to the scores of injuries described in Dr. Keen's monograph. This statement is injected here to indicate the value of a study of war surgery by surgeons engaged in non-military professional work.

Reading the chapters on Fractures, Shock, Sepsis, Removal of Projectiles, Treatment of Intracranial Lesions, surgeons of Pennsylvania will be gratified at seeing the adoption by military surgeons of ideas by no means novel in that state. Suspension in fractures, the relation of fat embolism to surgical collapse, antiseptic wound dressings, mathematical localization by X-rays, and care of cerebral wounds, as now in France, owe some of their availability to earlier teaching by Pennsylvania writers.

Former pupils of Dr. Keen will regret that he did not more generally paraphrase the statements of the writers, whom he quotes, instead of printing their paragraphs verbatim. His own incisive and direct statements have a teaching value that ordinary authors cannot emulate with success. If a third edition is printed, perhaps time will be given for him to prepare a Keen's "Extract" of Surgery of War Wounds. Then will be possessed by all the undimmed word of the master himself. J. B. R.

LOCAL AND REGIONAL ANESTHESIA, including Analgesia. By Carroll W. Allen, M.D., of Tulane University, New Orleans. Second Edition. Reset. Octavo of 674 pages, with 260 illustrations. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, $6.50 net.

Local anesthesia has gradually attained a prominent rôle in operative surgery. Its merits must be admitted even by those who seldom employ it in preference to general ether anesthesia. The author and Dr. Rudolf Matas, who writes the introduction and who was the admitted inspirer of the book, have been consistent and persistent advocates of the various means of inducing localized abolition of sensory nerve conduction.

They deserve much credit for developing the method to perfection. The volume is very bulky and printed on heavy paper, unnecessarily weighty for a book not illustrated with skiagraphs which need heavy and smooth sheets. It is encyclopedic in character to such an extent that the reviewer doubts the wisdom of so much repetition of the contents of the first edition. Why not excise, in late editions of a scientific work, those historical data which originally are collected for bibliophilic reference and not for daily use? One printing gives a permanent record for those looking backward in literary research.

The author admits that he omitted, at the suggestion of the publishers, many pages of bibliographic titles. A wise decision. The Index Medicus is accessible in most libraries.

Many useful illustrations accompany the valuable text. This is however, so exhaustive as to confuse the reader. Much condensation and omission of verbatim quotations would improve the book and increase its sale. J. B. R.

MAILING YOURSELF MONEY

Every time you stick a Thrift or War Savings Stamp on your card you are mailing money to yourself to be received later with interest. Cashing in these stamps is going to be better than "getting money from home," for with the money comes the reminder that you contributed to the great victory which then will have been completely won.

SOCIETIES

PITTSBURGH ACADEMY OF MEDICINE

Meeting of April 9, 1918

The Infected Gallbladder in Its Relation to Its Associated Glands. Dr. O. C. Gaub: The possessor of an infected gallbladder is ofttimes treated with an eye single only to this organ, whereas the damage done to its associated glands may far outweigh in seriousness the gallbladder infection itself. These glands in order of proximity are the liver, the large abdominal salivary gland or pancreas, the duodenum and the gland bearing part of the stomach or pylorus; the latter two organs are, anatomically, a continuing muscular tube lined by a richly endowed glandular mucosa and, while not conforming to our preconceived ideas of glands, act essentially as such, while their tubular and muscular character, while important, are in reality subsidiary properties.

Two questions present themselves immediately in considering this subject: (1) Along what path or paths does the gallbladder become infected and is there a simultaneous infection of its associated glands, or do these glands become involved secondarily as a sequence of the cystic infection, or may the gallbladder suffer alone? (2) Is the infected gallbladder always the determining factor in infections of its associated glands or may some one or other of these become primarily infected and in turn involve the gallbladder?

The answer to these questions opens up so many avenues of discussion that it is far beyond the scope of the phase of this symposium, but, from experimental and clinical evidence, it appears that the gallbladder may become infected both through the bile stream and by means of the blood stream. The infection of the gallbladder wall practically acts as a continual focus of infection, not only as a detriment to the body in general, but as a continual source of infection to its associated glands. It is known that when the gallbladder and its associated glands are normal there is an interrelationship existing that allows of orderly functioning, and it is just as true that when the gallbladder is infected that these normal relations are disturbed so that in addition to anatomic changes the normal physiology is also disturbed, and in this way we can account for the perversion of gastric and duodenal secretion.

We must view the biliary apparatus as a whole and not merely view the matter from the standpoint of the gallbladder. We may draw an analogy between the biliary apparatus and the upper part of the respiratory tract. Every acute infection of the upper respiratory tract involves not only nasal chambers, but to a greater or lesser extent its associated sinuses. When the most prominent symptoms are at once apparent in a sinus, such as a frontal sinus, we designate the conditions as frontal sinusitis, etc., so that it is well to remember that a preliminary infection of the biliary apparatus may make prominent symptoms referable to the pancreas, liver or gallbladder, and, depending on the clinical signs, we speak of an acute cholecystitis or an acute pancreatitis, as the case may be. But it is important to bear in mind that the entire biliary apparatus with its associated glands participates in the process.

This conception of the infected gallbladder in relation to its associated glands is, in my opinion, of the utmost importance as a guiding principle in the application of therapy, whether medical or surgical.

The Indications for Either a Cholecystectomy or a Cholecystostomy at Operation. Dr. J. D. Singley: The controversy as to the relative merits of cholecystostomy and cholecystectomy has been waged since Langenbuch first removed the gallbladder in 1882. The earlier conception of the pathologic changes in the gallbladder and its ducts was that these were induced by the presence of stones, usually primary in the gallbladder. Upon this basis there was little that could be said in favor of removal of the gallbladder. Removal of stones and drainage, in case any had been overlooked, was the logical procedure.

It is now some years since it was determined that stones were not the cause, but the effect of pathologic changes in the biliary tract; that infection of the gallbladder was the primary factor in a series of pathologic processes, one of which was the formation of calculi; and that serious and fatal conditions followed infection without the formation of stones. For a considerable period after recognition of these facts it was believed that infection was largely confined to the bile in the gallbladder having ascended through the common and cystic ducts or having descended from an incompetent liver through the hepatic ducts with the bile. With these ideas, cholecystostomy still held its place as a rational procedure.

The experimental work of Rosenow in recent years has shown that infection of the gallbladder commonly occurs through the blood stream and lodges in the wall of the gallbladder primarily, infection of the contents following. That infection may reach the gallbladder wall from infected bile descending from an incompetent liver is still regarded as probable, in some cases.

It has been demonstrated beyond question that no deleterious results follow removal of the gallbladder; and it has also been demonstrated that disastrous results may and do follow drainage of a diseased gallbladder, e. g., carcinoma, perforation, reformation of stones, overlooked stones, etc. Can the infected gallbladder recover completely and permanently after being infected? It is conceivable that it can, but I defy any one to determine which at the operating table. Can it recover after drainage? This is also conceivable, but granted that it does recover from the infection, fixation of the fundus occurs and the best working part of the gallbladder becomes inactive, as pointed out by Mayo.

For many years the principal argument advanced in favor of cholecystostomy was its lower mortality. This no longer holds. Cholecystectomy now gives the lower mortality. In the Mayo Clinic, during the years 1913-16, 2,594 cholecystectomies were done with a mortality of 1.3 per cent., and 481 cholecystostomies with a mortality of 6 per cent. From the same clinic the ultimate results in a large series of cases gave 71 per cent. of cures for cholecystectomy, with 53 per cent. of cures for cholecystostomy.

Granted that it is best to remove the gallbladder, shall it be done always and cholecystostomy wholly abandoned? By no means. The tolerance of the patient for operative measures must be considered and that operation chosen which offers the best chance for an immediate recovery, even at the expense of a secondary operation.

Now as to the cases in which the history and clinical symptoms appear to warrant the diagnosis of cholecystitis. If the gallbladder has been infected for a sufficient length of time it loses its blue color and assumes a paler shade with thickening of its walls. But until infection has existed a sufficient time for some fibrous tissue to develop the color or external appearance of the gallbladder is not a reliable indication of the presence or absence of infection. One of the most reliable early evidences of infection is enlargement of the lymphatic glands draining the gallbladder and its ducts. The enlargement of these glands, the abnormal appearance of the aspirated bile, and the appearance of the mucosa of the gallbladder after incision, will usually enable one to judge as to the probable presence or absence of infection. If there is any evidence of infection or disease the gallbladder should be removed. If not, I can see no advantage in draining it, but some disadvantage.

Personally, I have drained a number of gallbladders which I have had to remove subsequently, but I have never had occasion to regret doing a cholecystectomy. Convalescence following cholecystectomy is much more prompt, while the ultimate results are very much more satisfactory.

Cholecystostomy for infected gallbladders should be done only in those cases in which, on account of the local conditions present and the condition of the patient, it seems unwise to attempt removal of the gallbladder; and in associated pancreatitis where prolonged drainage is desirable.

Changes, Pathologic and Anatomic, Following Cholecystectomy and Cholecystostomy. Dr. Acheson Stewart: The gallbladder is often spoken of as a reservoir for bile. This theory, advocated mostly by physiologists, is not quite tenable from the surgical standpoint. No doubt the gallbladder is a reservoir, but its storage capacity is too small to be dignified by that function. Its capacity is about one to one and one-half ounces. Although under normal conditions it is capable of being distended to several times that capacity without subjective distress. When we consider that there are about fifty ounces of bile secreted in twenty-four hours it is difficult to believe the storage theory attributed to the gallbladder.

The gallbladder is not a quiescent organ; it is constantly undergoing rhythmic contractions, about eight to ten a minute, which expels or feeds the bile into the common duct. C. H. Mayo and Deaver are of the opinion that it acts as a tension bulb or a regulator of pressure in the biliary tract. If for any reason, normal or abnormal, the tension is raised in the common and hepatic ducts, the excess of bile is taken into the gallbladder, which in turn has the beneficial effect of reducing the back pressure of the bile on the parenchyma cells of the liver. And, on the other hand, when the pressure on the extrahepatic ducts is lowered, the bile from the gallbladder is expelled in spurts into the common duct. Therefore, from a surgical standpoint the mechanical function of a regulator would seem to be the most appropriate.

It has been claimed that the normal gallbladder by adding mucus to the bile renders it less irritating. Experiments made by Opie and Flexner show that bile drawn from the hepatic duct causes a more intensive inflammation where injected into the pancreas than that drawn from the gallbladder. However, that is of very little importance, as the bile does not come in contact with the pancreatic cells unless under diseased states of the common duct at or near its junction with the pancreatic duct.

In 1887 Oddi made numerous experiments with the idea of determining the functional importance of the gallbladder. He attempted to produce a continuous flow of bile into the intestine by removing the gallbladder from dogs. He found that in about sixty days, or a later period, the hepatic duct, cystic duct and common bile duct dilated to twice or three times their normal caliber. To obtain these results it must be assumed that some definite or powerful muscular obstruction is opposed to the continuous flow of bile. This led Oddi to the discovery of a special sphincter of plain muscle at the duodenal end of the common duct. This muscle is a true sphincter and is separate and distinct from the musculature of the duodenum. His experiments demonstrated two points, the ability of the extrahepatic ducts to dilate and compensate for the loss of the gallbladder subsequent to cholecystectomy, and the presence of a true sphincter muscle at the outlet of the common duct, which regulates duct tension and the flow of bile. I have observed on more than one occasion during a subsequent operation the dilatation of the extrahepatic ducts that results from cholecystectomy. The following case of congenital absence of the gallbladder also illustrates this condition. The history in brief is as follows: Mrs. G., aged 36, with a history of abdominal attacks of pain on the right side over the gallbladder and appendiceal regions existing over a period of two years, the attacks were more severe during the past six months following the birth of her third baby. The attacks usually lasted a few days. She never felt well between the attacks. The attacks were suggestive of gallbladder disease or recurring appendicitis. A right rectus incision was made, the appendix was delivered and found pathologic, and could easily account for her attacks. On further exploration in the neighborhood of the gallbladder I was surprised to find a total absence of the gallbladder. There was no evidence of pathology in this region. There were no adhesions suggestive of a previous inflammation. The common and hepatic ducts were easily exposed and freely exhibited to other surgeons present. I was impressed with the size of the common duct; it was twice or possibly three times larger than normal. This case, though congenital in origin, demonstrated clearly the dilation that occurs in the extrahepatic ducts.

Following cholecystectomy and the coincident dilatation of the extrahepatic ducts, the tensions of the bile become much less. It is natural to suppose that the dilatation of the common duct causes an atrophy of the sphincter Oddi. Usually the intraduct pressure is reduced from normal of 100 or 150 mm. of water to 40 mm. or almost a negative pressure. Should a negative pressure or complete dilatation and atrophy of the muscle Oddi occur the flow of bile into the intestinal tract will change from an intermittent one to a continuous one. Yet, no matter how nearly negative is the pressure within the duct, regurgitation of the duodenal contents into the common duct will not take place unless some diseased condition of the duodenal mucosa occurs. The fold of mucosa guarding the outlet of the duct and the angle at which the choledochus enters the intestines will prevent all regurgitation.

Since the excellent work of Rosenow we are led to believe that the most common source of gallbladder infections is through the systemic circulation. Infections occur less frequently through the descending and ascending routes. The infection is usually in the gallbladder wall and the coincident cholelithiasis is only a part of the general infective process, and the surgeon now knows that gallstones are not always constant in the gallbladder sufferers. A simple drainage operation will not cure all cases of chronic infection. We must look upon the gallbladder as a chronic infected diverticulum which requires excision just as a diseased appendix requires excision.

The Failures of Gallbladder Surgery as Seen by the Internist. Dr. J. A. Lichty: Of the 614 cases of gallbladder and duct diseases tabulated, 193, or 31 per cent., of patients were operated on and 421 were not operated on. These 614 cases occurred among 3,487 cases diagnosed as having some pathology, or at least some decided functional disturbance of the digestive system, and in which no other diagnosis seemed satisfactory. And they occurred among 14,000 patients as they appeared in private hospital and consulting practice. From these figures it will be seen that about 4.3 per cent. of cases of all kinds presented gallbladder and duct diseases, and that these comprised about 17.2 per cent. of all patients having diseases of the digestive system; 251 were males and 363 were females. Of the gallstone cases, 163 patients were males and 283 were females, while of the cancer cases three were males and eight were females.

Of the 193 patients operated on 137 had gallstones and 2 had gallstones, besides being malignant. Fifty-four had a cholecystitis or a chronic angiocholitis. Of the 137 gallstone patients operated on, 83 were cured, 13 were relieved, 8 experienced no benefit, 11 died within a month from the operation, 8 died later, and from 14 we have not received any report recently. Of the 11 who died within a month from the operation, 6 were common duct cases and 5 were simple gallbladder cases. The fact that more than half of the fatal cases were common duct cases is significant. One of these had had gallstone symptoms for twenty years, another for fourteen years, two for six years and two for five years. The extent of the pathology found at the operation seemed in direct proportion to the duration of the disease. Of the eight patients who died later than one month, 4 died from causes other than gallstones. Four patients, on account of recurring attacks, were operated on more than one time.

Of the 54 patients having cholangitis, and who were operated on, 22 were cured, 10 were relieved, 13 received no benefit, 2 died within a month after operation, 2 died several years after operation from other causes and 5 could not be traced. This class of cases gave the most unsatisfactory results, largely, we think, because of the divergent pathology found. Some were cases of simple chronic cholecystitis, others were cases of cholangitis showing the various types, catarrhal, suppurating and gangrenous, while still others showed a pericholecystitis. The majority were associated with other pathology, more or less grave, which determined the results. Of the two cancer patients who were operated on, one had cancer of the ampulla and the other of the fundus. These two, as well as the nine with malignant gallbladders, in which operation was not performed, died in due time.

In explanation of our mortality, we must call attention to the fact that these patients were operated on by twenty-four different surgeons, under varying circumstances and conditions. They were not selected cases. We do not recall that any patient was refused operation by the surgeon unless it was to wait until jaundice had cleared to an extent, or to wait the subsiding of an accompanying acute inflammatory condition. On the other hand, it is needless to say that many patients for whom operation was agreed on as the advisable procedure, refused operation, preferring to follow medical treatment or seek other advice. Otherwise, our list of operated cases would be much larger. In this respect the treatment of gallbladder and duct diseases differs widely from that of diseases of the appendix. In acute appendicitis the physician frequently can justly assume the attitude of a "holdup man": "Be operated on now or you may lose your life"; and on account of the stress of circumstances and the absolute confidence exhibited by the physician the patient almost invariably consents to the operation.

In gallbladder and duct diseases, on the other hand, when the patient is in greatest pain and is most willing to do anything to avoid a recurrence, he must be told by the physician, and by the surgeon if he is called, that the time is not opportune for operation until the attack is over and the acute inflammation and jaundice, if they are present, have subsided, when an operation will be advisable and necessary. Not infrequently after the attack there is such a feeling of well-being that no amount of pressure will convince the patient that an operation must be done to prevent future complications. This is one explanation for the large proportion of unoperated cases in this report. It must be admitted, therefore, that the internist is probably in a better position to speak of the end results in gallbladder and duct diseases than the surgeon. The surgeon sees usually only the operated cases, whereas the internist meets and must stay with or follow the large number of patients in whom the severity and complications of the disease prevent an operation.

Dr. J. P. Griffith, in discussion: The point to be emphasized in gallbladder cases is an early diagnosis. One cannot compare the appendix with the gallbladder as in the former case its removal removes the trouble, while in the latter part of the trouble may remain, as the gallbladder is only a part of the biliary tract. A patient with an edematous gallbladder will get well better with a cholecystostomy than with a cholecystectomy, as long drainage is needed. Cases complicated with pancreatitis do better with a cholecystostomy, for here, too, a long complete drainage is essential. In my judgment, the mortality is less in cholecystostomies than in cholecystectomies.

Dr. F. L. Todd: The surgeon should take into consideration the personal equation of each patient, particularly the condition of the heart, lungs and various incidents of wear and tear of life, in order that he may meet each exigency as it arises.

Dr. Echard: Many cases of appendicitis are associated with gallbladder trouble, and cholecystostomy should always be done by the occasional operator, as a cholecystectomy requires more skill. Among the indications for a cholecystectomy are stone in the cystic duct and tendency to carcinoma.

Dr. Canning of Atlantic City: Older patients often give a history of pain ten to fifteen years previous to consulting a physician, with no further return of pain until recently. They are now in such condition as to require an operation which could have been done with greater safety to the patient years ago. The longer patients wait the more pathology may develop and longer drainage may be required. I have seen patients following cholecystectomy suffer from pains similar to their preoperative attacks.

Dr. T. G. Simonton: The effect of gallbladder diseases on the cardiovascular system and the general strength of the patient is considerable. Illustration of the diseased gallbladder in the rôle of a focus of infection: I saw a patient one year ago with a large goiter, who refused operation at the hands of several prominent surgeons in the country. Last summer she had an attack of cholelithiasis, requiring an immediate operation. Three large stones were removed and the gallbladder drained, there being considerable pus in it. Following the operation the goiter diminished in size and has now entirely disappeared.

With gallbladder infections one often has renal irritation and chronic myocarditis. Illustrative of this, a physician of this city, who ten years ago was suddenly seized with a chill and pains, had previous to this suffered severe attacks of cardiac asthma. Patient was quite emaciated, so that it was possible to feel stone in the gallbladder. He refused operation for some time, but after severe pains he consented to the operation, and Mayo removed a large stone. Following operation the heart and kidneys gradually improved, his asthma disappeared and he was able to resume his practice. Babcock of Chicago cited seventy-six cases of gallbladder trouble with marked improvement of myocarditis following operation.

Dr. O. C. Gaub: The whole gallbladder question centers around the entrance of infection. The gallbladder in itself may be the focus of infection the same as the teeth, accessory sinuses, etc. If we are dealing with infection and the gallbladder and the ducts are a part of the same continuous system it seem illogical to remove the gallbladder and leave behind infected ducts. On the other hand, if a cholecystostomy is performed it is apt to be followed by adhesions and a crippled stomach. This can be overcome to a large extent if the gallbladder is removed and the biliary tract drained until all evidence of the infection has disappeared. This may be accomplished by cutting the cystic duct flush, introducing a T tube through the opening into the common duct and bringing it out through Morrison's pouch and stab incision in the side. Murphy of Chicago cystoscoped the bladder and did not close it until all evidence of infection had disappeared. I feel that in the future surgeons will drain the common duct more frequently than in the past. It is also important to reestablish the circulation to take up the products of infection and when all evidence of infection has cleared up remove the tube and let the wound close. Try to drain without leaving behind a morbidity as bad as the disease.

Gallbladder failures are often due to the mistakes or omission of the surgeon. After incision has been made the surgeon should examine the patient as a patient. He should look for all possible points of infection, such as appendix, kidneys and the entire biliary tract, and try to remove all foci of infection.

Dr. J. D. Singley: Dr. Lichty hit the nail on the head when he said to see these cases early. The operation of choice should be fitted to the patient and that one performed that seems the most expedient. Generally speaking, it is best to remove all infected gallbladders. It is not necessary to make a diagnosis of cholelithiasis, but one should make diagnosis of cystitis, which is the important point. Recently I have passed a fenestrated rubber tube through the cystic duct down the common duct into duodenum and through it flushing out the common duct with normal salt solution daily until the bile drained through the tube appeared healthy and normal.

Frederick B. Utley, Sec.

COUNTY SOCIETY REPORTS

THE SIXTEENTH CENSORIAL DISTRICT MEETING

The Sixteenth Censorial District held its eighth meeting at Sayre, July 9. There was a good attendance notwithstanding the rain, thirty-eight physicians having registered. A few physicians who were present failed to register. The meeting was honored by the presence of a number of the wives of physicians and some nurses from the Packer Hospital.

The forenoon was devoted to surgical clinics at the Packer Hospital. At 1 o'clock the members and guests assembled at the Parish House adjoining the hospital grounds, where the ladies of St. Martha's Guild had tastefully arranged and decorated a table for fifty plates. After enjoying a delicious dinner, Dr. Walter F. Donaldson, Pittsburgh, president of the Medical Society of the state of Pennsylvania, was introduced and gave a pleasing and timely address. He emphasized the need for more members in the Medical Reserve Corps, for a closer cooperation of individual physicians with the medical organization, the importance of the Medical Defense Fund of the state society, the necessity for watchfulness and effort to prevent the passage by the next legislature of pernicious health insurance laws, and the need of necessary changes to the Workmen's Compensation Law.

The physicians then adjourned to the Trustees' Room of the Packer Hospital. Dr. Samuel P. Mengel of Wilkes-Barre gave a carefully prepared paper on "Traumatic Surgery as Seen in the Coal Regions." He emphasized the importance of the careful treatment of all injuries, however slight, and disinfection with iodin of all open wounds. Every case where there is a possibility of tetanus should have antitetanus serum. The Carrel-Dakin method can be used successfully only in hospitals. Dichloramin-T is to be preferred in other cases. Dr. Mengel gave some interesting statistics on the results of his work in the mining regions. This paper was very instructive and thoroughly enjoyed by all.

Dr. Milton B. Hartzell, Philadelphia, professor of dermatology in the University of Pennsylvania, then held a Skin Clinic. The first patient presented was suffering from scabies, and the doctor emphasized the importance, when using sulphur ointment, of bringing it in contact with all parts of the body and interrupting the same after three or four days of treatment in order to prevent a sulphur dermatitis, which often persists after the parasites have all been destroyed. The use of the ointment should be renewed when necessary. The next patient was one with herpes zoster. Dr. Hartzell made plain the diagnostic points of the various varieties of zoster. His experience does not warrant him in expecting much from medication. If the patient is debilitated, iron, arsenic and cod-liver oil are indicated. Arsenic should not be begun until the acute symptoms have subsided, as arsenic may act as an exciting or continuing factor in the disease. The next patient was one with ring worm; this disease was spoken of as much more serious than is often considered. The lantern slides exhibited greatly helped in making plain many types of ringworm, but Dr. Hartzell emphasized the fact that many cases of ringworm could be diagnosed only by microscopic examinations. He exhibited slides of several patients who had been treated for a long time at different hospitals without improvement before the real nature of the case was recognized by careful microscopic examinations. For most cases of ringworm he recommended 2 per cent. of salicylic acid in a 70 per cent. alcoholic solution. For ringworm of the nails he recommended the use of tincture of iodin. The next patient had a senile epithelioma on her cheek, and the doctor explained the slow development of most skin cancers. The last patients were suffering with dermatitis caused by irritating disinfectants. The doctor said that of all the irritating drugs used in surgery and in sanitation, formaldehyd is the worst.

After the presentation of the patients mentioned above, numerous lantern slides were exhibited, illustrating the diseases thus far discussed as well as some others.

A vote of thanks was extended to the visitors for their valuable lectures, and Dr. Donald Guthrie, Sayre, was elected chairman and Dr. Herbert L. McKown, Tunkhannock, secretary for the next meeting, and they were authorized to fix the time and place of the next meeting.

The only regret of those present was that the weather prevented a larger attendance.

C. L. Stevens, Secretary Pro Tem.

BERKS—JULY

The Berks County Society held its annual outing, July 9, at the Eagles' Mountain Home, Mount Penn. Lieutenant Newcomet from Camp Grant, Rockford, Ill., gave us an enjoyable talk on "Camp Life and a Doctor's Work in It." Dr. P. Brooke Bland of Philadephia discussed "A Few Factors That Contribute to a Doctor's Success." He referred to the patriotic parade of nations, July 4th, as a most soul-inspiring sight and said that all nations there represented share with us the pride in being Americans. Next to his pride in being an American, Dr. Bland feels proud of being a Berks Countian. He recalled some of his boyhood recollections, including knowledge of some of Berks County noted medical men like Drs. Brook, Beaver, Weidman, Kurtz and Kitchener. Among things favoring success in a doctor's life are faithfulness to every obligation, honesty in every purpose, being true to one's patients as to oneself, attention to detail in every task. The profession of medicine is founded on the highest ideals and traditions in the human race. It is to benefit the greatest number as well as the least. Among the practitioners true fraternalism is needed; the lack of it is responsible for many conditions of today. We should consider the whole world our country and all men as brothers. Disappointments should strengthen and purify; gentleness should replace anger and gruffness.

Clara Shetter-Keiser, Reporter.

CLEARFIELD, ELK AND JEFFERSON—JULY

On July 11, the Clearfield, Elk and Jefferson County physicians met at Dubois, when they executed the most interesting program that has been carried out for years in this organization. About eighty physicians were present and all were delighted with the enthusiasm which prevailed throughout the meeting. Dr. C. G. Wilson of Elk County presided and Dr. J. M. Quigley of Clearfield County acted as secretary.

Dr. Russell H. Boggs of Pittsburgh read a paper on "Tubercular Adenitis and Its Treatment with Roentgen Ray." The contention that these cases should be treated with roentgen ray before resorting to surgery was confirmed by Drs. Reiley and Waterworth of Clearfield, Dr. Mercur of Pittsburgh, Dr. McGirk of Philipsburg, and Dr. Schumacher of Dubois, who discussed the paper.

Dr. Donald Guthrie of Sayre read a paper on "Diagnosis of Cancer of the Stomach and Its Treatment." The paper covered a wide range, while Dr. Guthrie showed a mastery of his subject. That early diagnosis and surgical interference was indicated in these cases, and if the patients were to be saved at all it must necessarily be through the surgical field, was concurred in by Drs. Free of Dubois, Mercur of Pittsburgh, Murray of Punxsutawney and Flynn of Ridgway, who discussed this paper. Our physicians will always welcome Dr. Guthrie for he knows what he is talking about.

The next speaker was Dr. Walter F. Donaldson, president of the state society. His subject was a War Message, within the confines of the state as well as the external disturbances that shock the world at this time. He urged physicians where they can be spared from their communities, to enter the Medical Reserve Corps, but at the same time carefully and unselfishly to consider the needs of the people in civil life before enlisting in army service. He pointed out the dangers of paternalistic government, which is being promulgated by the anti-societies, composed of long-haired men and short-haired women. These societies are largely the result of German propaganda, which has become a menace to the whole world. The proposed social insurance for Pennsylvania is paternalistic and its ultimate purpose is to place us in the same category as Germany has placed her people. Dr. Donaldson pleaded for the development of individualism, Americanism and democracy against autocracy, which stifles individualism. He made the claim also, which the light of recent events proved, that when prohibition prevails in Pennsylvania we will not need the so-called social insurance, which is a product of German influence in this country. Dr. Donaldson gave us a very useful address and we hope he may visit us again.

John H. Murray, Reporter for Jefferson County.

JUNIATA—JULY

The Juniata County Society met, July 3, in the Juniata Club rooms, Mifflintown. Minutes were read and approved. The memorial resolutions on the death of Dr. J. G. Heading were read and ordered spread on the minutes.

Dr. C. F. Metz of Thompsontown read a paper on "Hysteria." He gave a definition of the disease and the pathology and symptoms. Under diagnosis he said that a complete history of the case should be secured. It is commonly said that hysteria simulates all diseases; the truth is that it simluates none exactly. There is sometimes a confusion between hysteria and neurasthenia. These two conditions merge into each other and are hard to separate in some cases. The mental state of suggestibility is highly characteristic of hysteria, as well as the tendency of the symptoms to come and go. In neurasthenia this is not so marked; we do not see the characteristic permanent stigmata of hysteria, such as paralysis, anesthesia, aphonia, anuria, etc. The hysterical fit can closely simulate that of epilepsy, but there is no biting of the tongue, no frothing at the mouth, no injury to the person, no involuntary passage of urine and the pupils are not affected. Doubtless the profound unconsciousness of grand mal is not seen in hysteria; but in petit mal the consciousness is often but momentarily confused, hardly lost. Hysteria is not momentary as a rule. Apoplexy and thrombosis are to be differentiated from hysteria by the complete history and cardinal signs and symptoms.

Treatment consists in the removal of the patient from those causes which tend to prolong nervous irritability and stress; moderate exercise out of doors and good food. If anemia is present it must be overcome by proper tonics. Insomnia and peripheral nervous irritation should be treated by hot bathing, etc. Sedatives may be needed, care being used not to let the patient become a morphin user. Local anesthesia may be helped by the use of the rapidly interrupted faradic current, administered by means of the ordinary wet sponge, or if the anesthesia is marked, through the wire brush. The physician should use a dominant influence over the patient. The treatment of the hysterical attack itself consists in using amyl nitrite by inhalation; if amyl nitrite cannot be had or used, ether can be used and pushed freely, but chloroform is usually too agreeable to the patient to be advantageous. The dry electric brush may be touched at various points on either side of the spine.

Amos W. Shelley, Reporter.

PHILADELPHIA—MAY

The Philadelphia County Society met May 22 at 8:30 p. m., President Hammond in the chair.

"Tuberculosis from the Standpoint of the Genito-Urinary Surgeon" was given by Dr. Benjamin A. Thomas. Tuberculosis of the genito-urinary tract is invariably secondary to systemic tuberculosis. In speaking of "primary" tuberculosis of the kidney we refer to the part of the genito-urinary tract primarily involved. Urogenital tuberculosis is characterized by the fact that it masquerades under misleading and often misinterpreted symptoms, a fact which is doubtless responsible for the astounding revelation that 70 per cent. of all patients present symptoms of over a year's duration before consulting the surgeon, and that only 10 per cent. consult the surgeon during the first six months of their symptomatology. That these patients are deprived of surgical treatment (alone curative) is due either to the fact that they are temporized with by treatment for protracted cystitis, without orological investigation, or that many physicians do not realize that nephrectomy is the treatment indicated.

Urogenital tuberculosis is divided into (1) the urological type; (2) the genital type. In at least 80 per cent., constituting one-third of all surgical lesions of the kidney, this organ was primarily involved. In 12 per cent. the epididymis is the primary cause and the remaining 8 per cent. is divided among the prostate, seminal vesicles and uterine adnexa. Although the prostate is primarily involved in approximately only 6 per cent. of cases, it is the seat of tuberculosis in at least 75 per cent. of patients with urogenital tuberculosis, due to the fact that it is the foyer, exchange, or cross-roads, as it were, between the urinary and the genital tracts. The bladder as a primary seat of tuberculosis is of such rare occurrence that its incidence is negligible.

Tuberculosis of the kidney usually occurs in the second and third decades of life; about 10 per cent. of cases, in my experience, occur prior to the twentieth year and 30 per cent. after the fortieth year of life. Vesical irritability is the chief, predominant and earliest sign of renal tuberculosis in 90 per cent. of patients, indicating the necessity of early, complete urological examination if these patients are to receive the treatment to which they are entitled at a time when cure is possible. Two questions of first importance are: (1) Is the cystitis tuberculous? (2) If so, is the tuberculosis of renal or genital origin? The importance of chromo-ureteroscopy (cystoscopy plus indigocarmin as a functional kidney test), roentgen ray, and pyelography, in the differentiation of an ordinary pyogenic renal infection, tumor, and calculus is to be carefully considered.

Routine ureteral catheterization of a normal ureter in the presence of tuberculous cystitis, as a matter of diagnostic necessity is to be unreservedly deplored because chromo-ureteroscopy is all-sufficient for the best management of such cases, and is devoid of erroneous results incident to dependence upon ureteral catheterization, and particularly the possibility of the infection being conveyed to the healthy kidney. Nephrectomy with an immediate mortality of less than 5 per cent. and with a promise of 80 per cent. of cures for a period of at least three years, as contrasted with 80 per cent. of deaths inside of two and a quarter years by medical and palliative procedures is strongly recommended in qualified cases as the treatment par excellence for tuberculosis of the kidney. In genital tuberculosis of either the testicle, prostate, or seminal vesicles, treatment rests between operative intervention and palliative treatment along antituberculous lines, including tuberculin, with a definite inclination toward conservatism.

"Tuberculosis of the Peritoneum" was given by Dr. F. Hurst Maier. The Mayos in 6,000 laparotomies found some form of tuberculosis of the peritoneum in 4 per cent. of the cases and that its occurrence was in the ratio of four cases in women to one in males. The greater frequency in women they attribute entirely to infection of the fallopian tubes. In children there is no marked sex proclivity. Tubercular peritonitis is almost always secondary to focal infection in the lungs or intestines, fallopian tubes, or appendix. Kelly found that the onset usually occurred during the puerperium. Three varieties, the names of which are descriptive of the pathology are: (1) serous (ascitic), 75 per cent.; (2) adhesive or fibroplastic, 20 per cent.; (3) caseous or ulcerative, 5 per cent. These so-called types, however, are really expressions of different stages of development. The Mayos believe that ascites is more common in women with tubercular tubes; while in both male and female patients the fibroplastic forms are relatively more common where the appendix or an ulcerated intestinal lesion has been the source of peritoneal involvement. In the early stages diagnosis is practically impossible, the slight symptoms being attributed to passing functional disturbances of stomach, bowels or reproductive organs. Only upon the manifestations of abdominal symptoms is the question of tuberculosis of the peritoneum raised. From an ovarian cyst, encysted tuberculosis of the peritoneum may be differentiated by noticing the absence of dulness in the middle line, the absence of a definite cyst wall, the more irregular outline, the more rapid growth, raised temperature. The encysted varieties have been mistaken for many abdominal conditions. The prognosis is best in the ascitic form of the disease and the most unfavorable in the caseous type. A grave prognosis is indicated in cases with particularly high temperature denoting mixed infection.

In removal of diseased tubes and appendix in the operative treatment of tubercular peritonitis care must be taken not to disturb adhesions. The Mayos found that there were fewer relapses in those cases in which the tubes were removed, and that patients suffering from recurrent ascites after as many as four laparotomies, were cured by the removal of the primary focus; also that unless the uterus were much affected, its removal gave no better result than simple salpingectomy.

"Tuberculosis from the Standpoint of the Orthopedic Surgeon" was given by Dr. G. G. Davis. Tuberculosis is interesting to the orthopedist because it produces cripples. The handling and treatment of cripples can be carried out only by one who has been trained and prepared to take care of that class of patients. Tuberculosis of the bones and joints is a peculiar disease to the extent that it does not kill the patient quickly, but disables him. The person who becomes a cripple is liable to become a charge on the community. Communities do not care for their cripples rightly, and they will not do so until, as in other questions, compulsion is felt. The efficiency of the community is affected by the number of its cripples. This is seen in industrial life and while the state has taken cognizance of cripples in the industries it has not done so regarding tuberculous cripples.

If tuberculosis is a preventable disease, those who can but do not prevent it are responsible. Tuberculosis of the lungs may be sudden and overwhelming, but the bulk of the cases in bone and joint tuberculosis are slow, insidious and progressive. As a rule they give ample warning that treatment may be instituted. In every community in which there are cripples from tuberculosis, as a rule, somebody is to blame for not having them cured in time. Regarding the social treatment of tuberculous cripples it may be said that the community and the parents very often view them from an entirely erroneous standpoint. A cripple may be absolutely disabled; the majority are not, and are capable of doing a large amount of work. If you put the microscope upon humanity you will find it hard to say who is not a cripple. Of two children in the same family, one may be a tuberculous cripple; the other may have a disability of some other character. He may not be as bright mentally as the tuberculous cripple. Why, therefore, should the latter be pampered and given a false view of life, and the other with more obstacles is punished for not studying his lessons.

It is discouraging to an orthopedic surgeon who endeavors to instill ambition into a cripple educated to be self-supporting, to find such a child pampered by the parents as soon as he reaches home. Such an attitude of the family toward the cripple is entirely wrong. A tuberculous cripple, like all others, should be taught self-reliance and its duties to the other members of the family and to the community. The orthopedic treatment of tuberculous cripples is of necessity carried on in institutions. For example, a child with Pott's disease should for a certain period of the treatment be confined to bed. If treatment is well carried out the case is almost certain to pursue a favorable course. Therefore, when a physician in general practice finds a child with tuberculous spine he should have it placed under hospital treatment. It is a regrettable fact, however, that the needed hospital facilities are difficult to obtain for the chronic case. I believe that this war will enable us to take care of our chronic tuberculous patients and to pay attention to other than the acute conditions. What might be termed the strictly orthopedic handling of these tuberculous cases consists in the local treatment and their use of apparatus. Emphasis should be placed upon the importance of preventing irritation of the local spot of the disease. To get such a patient well, however, he must be treated constitutionally. He must be given fresh air and sunlight. If we can master the hygienic question we can cure the condition. This is not sufficiently appreciated.

Dr. H. R. M. Landis spoke upon "Tuberculosis from the Standpoint of the Internist."

Dr. Max Staller read "The Value of Tuberculin in the Diagnosis and Treatment of Tuberculosis."

WARREN—JULY

The Warren County Society met at the State Hospital, Warren, July 22, with an attendance of twenty. A committee was appointed to consider changes in the fee bill and another to investigate the sanatorium needs of indigent tuberculous patients. The Committee on National Defense reported on the census of physicians and Dr. Brown reported on the American Medical Association meeting.

Dr. Adelaide Ellsworth of Warren read a paper on "The Woman Doctor in War." The paper gave very convincing statistics concerning the position women are taking in the great industries connected with the prosecution of war, both in America and in foreign lands, and showed how the woman doctor in the face of great opposition has won for herself a commanding place in France and England, not only in civil hospitals but in military institutions. (The paper will appear in a later issue of The Journal.)

Luncheon was served by Dr. Mitchell.

M. V. Ball, Reporter.

NECROLOGY

In Memoriam—Samuel A. S. Jessop, M.D.

Dr. Samuel A. S. Jessop was born in Kittanning, Sept. 10, 1856. He attended school in his native town and in Lambeth College; then took up the study of medicine with his brother, Dr. Charles J. Jessop, and graduated from the Jefferson Medical College in 1879. He served one year in Blockley Hospital, Philadelphia, and located in Atlantic City, N. J., where he practiced for three years. He returned to Kittanning and formed a partnership with his brother. Their practice extended and continued to grow until within a year of his death, when failing health caused him to withdraw from active practice.

He was active in athletics, a fine musician, a good surgeon and a kind and sympathetic physician. He was on the staff of the Kittanning General Hospital, Surgeon to the Pennsylvania and the Kittanning and Leechburg railroads; he served on the Council of his city and was one of the first to urge paving the streets. He was a member of the county, state and national medical organizations and was a member of the Masonic fraternity.

Jay B. F. Wyant, Secretary,
Armstrong County Medical Society.

In Memoriam—John Senn, M.D.

The Lycoming County Medical Society wishes to express itself on the death of Dr. John Senn:

John Senn was born Dec. 20, 1847, at Polk, Wis. His ancestors were from St. Gallon, Switzerland. His preliminary education was received in a Normal School at Oshkosh, Wis. In receiving his medical education, he spent one year in the Rush Medical College. He was influenced by his mother to prepare himself as a clergyman and so entered the Theological Department of the University of Rochester and was graduated in 1872. His health not being very good he decided to spend a year in Europe, so in the fall of 1872 he attended lectures and clinics at Vienna, Austria, and Stuttgart, Germany.

In November, 1873, he returned and was married to Susanna Gore of Erie, Pa. He accepted the pastorate of a church in Canada where he remained two years. His health again failed him and he spent one year with his wife's parents at Erie. He then accepted the pastorate of the First German Baptist Church at Buffalo, N. Y., where he remained five years. During this time he attended lectures at the College of Physicians and Surgeons, which later incorporated with the University of Buffalo, from which he was graduated in 1880. He came to Williamsport in 1882 as pastor of the First German Baptist Church of this city, which is now known as Calvary Baptist Church, where he was pastor for twelve years, but he also practiced medicine. In 1894 he took a postgraduate course in medicine in New York City after which he resigned as pastor and devoted his whole time to the practice of medicine.

Dr. Senn died June 17, at his home in Williamsport, after a siege of illness confining him to his bed six months. A noble man has left us. The wife has lost a loving, true and devoted husband; the sons, a good father; the community, a valuable and faithful physician, and the society, a zealous member. Dr. Senn had all the qualities required to be a successful physician. He lived the life of a Christian gentleman and adorned the Christian ministry as well as the medical profession. His death is a distinct loss to his family, the community and the medical profession.

The society hereby extends its heartfelt sympathies to the bereaved family.

W. F. Kunkle,
C. E. Heller,
Edward Lyon.

Sixty-Eighth Annual Session of the Medical Society of the State of Pennsylvania

PHILADELPHIA, SEPTEMBER 23-26, 1818

HOTEL ACCOMMODATIONS FOR THE PHILADELPHIA SESSION

The Bellevue-Stratford will be the official headquarters during the Philadelphia Session, Sept. 23-26, 1918. The officers of the society will be located there. All scientific, social and business meetings, the Commercial Exhibit and the registration will be located on the second floor of this hotel.

Below is given a list of hotels and rates per day, European plan. Members should write to the hotels direct. On account of the crowded condition of the hotels we would suggest that in every case possible two persons should occupy one room.

	Rooms without Bath		Rooms with Bath	
	Single	Double	Single	Double
Adelphia, Chestnut and 13th Sts.			$3.00 up	$5.00 up
Aldine, Chestnut and 19th Sts.	$2.00 up	$3.00 up	3.00 up	4.00 up
American plan at Aldine, $3.00 per day per person additional.				
Bellevue-Stratford, Walnut and Broad Sts.	2.50 up		Court, 3.50 up	5.00 up
				Twin beds, 6.00 up
			Outside, 5.00 up	7.00 up
Colonnade, Chestnut and 15th Sts.	2.00 up	3.50 up	2.50 up	4.00 up
Continental, Chestnut and 9th Sts.	1.50 up	2.50 up	2.00 up	3.00 up
Green's, Chestnut and 8th Sts.	1.00 up	1.50 up	2.50 up	3.50 up
Hanover, Arch and 12th Sts.	1.00 up	2.00 up	2.00 up	3.00 up
Rittenhouse, Chestnut and 22d Sts.	2.00 up	3.00 up	2.50 up	3.50 up
Ritz-Carlton, Walnut and Broad Sts.			4.00 up	6.00 up
St. James, Walnut and 13th Sts.	2.00 up	3.00 up	3.00 up	4.00 up
The Little Hotel Wilmot, S. Penn Sq. (Hot and cold running water)	1.50	2.50		
Vendig, Filbert and 13th Sts.			Shower, 2.50 up	3.50 up
			Tub, 3.00 up	4.00 up
Walton, Locust and Broad Sts.	2.00 up	3.00 up	2.50 up	3.50 up

MEMBERS OF THE HOUSE OF DELEGATES

(The offset names are the alternates, and where street address only is given the name of the city follows the name of the county.)

ADAMS COUNTY

- Harry S. Crouse, Littlestown, Pres.
  - Henry Stewart, Gettysburg, Sec.
- Eugene Elgin, East Berlin.
  - Tempest C. Miller, Abbottstown.

ALLEGHENY COUNTY (PITTSBURGH)

(Entitled to eleven elective delegates.)

- Ellis S. Montgomery, Jenkins Bldg., Pres.
  - William H. Mayer, 6077 Jenkins Arcade Bldg., Sec.

(Term Expires in 1918.)

- Adolph Koenig, Westinghouse Bldg.
  - DeWitt Nettleton, Sewickley.
  - Charles E. Lindeman, 7047 Hamilton Ave.
- Edward B. Heckel, Jenkins Bldg.
  - Richard E. Brenneman, Jenkins Arcade Bldg.
  - John Porter, 1000 Park Ave., McKeesport.
- William S. Langfitt, Jenkins Arcade Bldg.
  - Charles K. Owens, Jenkins Arcade Bldg.
  - Ralph L. Hill, Carnegie.
- Elmer E. Wible, Diamond Bank Bldg.
  - Arthur H. Gross, 688 Forest Ave., Bellevue.
  - Julius J. Clarke, 5713 Rippey St.
- Archibald A. MacLachlan, Empire Bldg.
  - William P. McCorkle, Sheridanville.
  - Thomas E. McConnell, New Kensington.
  - Alanson F. B. Morris, 6901 Hamilton Ave.
  - Willet P. Hughes, 706 Highland Bldg.

(Term Expires in 1919.)

- John M. Thorne, 7036 Jenkins Arcade Bldg.
  - Edward L. Sutton, Lincoln Ave., Bellevue.
  - William J. K. Snyder, Avalon.
- James K. Everhart, 5504 Harriet St.
  - William A. Terheyden, 4810 Liberty Ave.
  - George W. Stimson, Jenkins Arcade Bldg.
  - Lloyd L. Thompson, 305 E. Eighth Ave., Homestead.
  - George S. Schoyer, Highland Bldg., E. Liberty Sta.
  - Alvan W. Sherrill, 5506 Ellsworth Ave.
  - W. Clark Maxwell, 708 Highland Bldg.
- Joseph E. Willetts, 5150 Jenkins Arcade Bldg.
  - Charles H. Hayes, 133 Hazelwood Ave.
  - Charles S. Orris, 169 Brackenridge Ave., Tarentum.
- Edward E. Mayer, Jenkins Arcade Bldg.
  - John M. Luther, Jenkins Arcade Bldg.
  - Clyde O. Anderson, 7043 Frankstown Ave.

ARMSTRONG COUNTY

- Jesse E. Ambler, Ford City, Pres.
  - Jay B. F. Wyant, Kittanning, Sec.
- Frederick C. Monks, Kittanning.
  - David I. Giarth, Ford City.

BEAVER COUNTY

John J. Allen, Monaca, Pres.
Boyd B. Snodgrass, Rochester, Sec.

BEDFORD COUNTY

William P. S. Henry, Everett, Pres.
Harry I. Shoenthal, New Paris, Sec.
William C. Miller, State Health Dept., Harrisburg.
Walter de la M. Hill, Everett.
Edmund L. Smith, Schellburg.

BERKS COUNTY (READING)

George G. Wenrich, Wernersville, Pres.
Charles P. Henry, 846 Center Ave., Sec.
Israel Cleaver, 223 S. Fifth St.
Frank G. Runyeon, 1390 Perkiomen Ave.
H. Philemon Brunner, 122 Oley St.
George W. Kehl, 418 North Tenth St.

BLAIR COUNTY (ALTOONA)

Henry J. Sommer, Jr., Hollidaysburg, Pres.
Charles F. McBurney, 710 Ninth St., Sec.
Gerald D. Bliss, 1220 Thirteenth Ave.
Paul F. Pershing, 1203 Seventh Ave.
Louis S. Walton, 53 Central Trust Bldg.

BRADFORD COUNTY

Mahlon B. Ballard, Troy, Pres.
Cyrus Lee Stevens, Athens, Sec.
Nelson S. Weinberger, Sayre.
C. Melvin Coon, Athens.
Charles M. Woodburn, Towanda.

BUCKS COUNTY

Horace Fleckenstine, Newportville, Pres.
Anthony F. Myers, Blooming Glen, Sec.
Alfred E. Fretz, Sellersville.
William J. Wilkinson, Sellersville.
Howard Pursell, Bristol.

BUTLER COUNTY

Egbert T. Simpson, Butler, Pres.
L. Leo Doane, Butler, Sec.
James L. Christie, Conoquenessing.
M. Edward Headland, Butler.

CAMBRIA COUNTY (JOHNSTOWN)

Robert C. Davis, 413 Locust St., Pres.
Leo W. Hornick, 130½ Market St., Sec.

CARBON COUNTY

Calvin J. Balliet, Lehighton, Pres.
Jacob A. Trexler, Lehighton, Sec.
Alexander Armstrong, White Haven.
Wilson P. Long, Weatherly.
Ira E. Freyman, Weatherly.

CENTER COUNTY

Lincoln E. Kidder, Boalsburg, Pres.
Marvin W. Reed, Bellefonte, Sec.
Harvey S. Braucht, Spring Mills.
Grover C. Glenn, State College.

CHESTER COUNTY

Percy C. Hoskins, West Chester, Pres.
Joseph Scattergood, West Chester, Sec.
John H. Burkartmaier, Avondale.
Francis B. Jacobs, West Chester.
D. Edgar Hutchison, East Downingtown.

CLARION COUNTY

John F. Summerville, Monroe, Pres.
Charles C. Ross, Clarion, Sec.

CLEARFIELD COUNTY

William E. Reiley, Clearfield, Pres.
John M. Quigley, Clearfield, Sec.
Samuel J. Waterworth, Clearfield.
Ward O. Wilson, Clearfield.

CLINTON COUNTY

Theodore E. Teah, Lock Haven, Pres.
Robert B. Watson, Lock Haven, Sec.
Clair B. Kirk, Mill Hall.
Saylor J. McGhee, Lock Haven.

COLUMBIA COUNTY

Henry Bierman, Bloomsburg, Pres.
Luther B. Kline, Catawissa, Sec.
Emanuel A. Alleman, Berwick.
Edward Everett, Millville.
J. Bruce Hess, Benton.

CRAWFORD COUNTY

Oliver H. Jackson, Meadville, Pres.
Cornelius C. Laffer, Meadville, Sec.

CUMBERLAND COUNTY

George L. Zimmerman, Carlisle, Pres.
Calvin R. Rickenbaugh, Carlisle, Sec.
R. McMurran Shepler, Carlisle.
Samuel E. Mowery, Mechanicsburg.
David W. Van Camp, Plainfield.

DAUPHIN COUNTY (HARRISBURG)

H. Hershey Farnsler, 1438 Market St., Pres.
Jesse L. Lenker, 232 State St., Sec.
John B. McAlister, 234 North Third St.
David S. Funk, 300 North Second St.
Clarence R. Phillips, 1646 North Third St.
J. Wesley Ellenberger, 922 North Third St.
Thomas S. Blair, 403 North Second St.
John Oenslager, Jr., 711 North Third St.

DELAWARE COUNTY (CHESTER)

G. Victor Janvier, Lansdowne, Pres.
Walter E. Egbert, 601 East Thirteenth St., Sec.
Adam J. Simpson, 401 East Twelfth St.
J. Clinton Starbuck, Media.
Katharine Ulrich, 413 East Ninth St.

ELK COUNTY

Clarence G. Wilson, St. Marys, Pres.
Samuel G. Logan, Ridgway, Sec.
Samuel G. Logan, Ridgway.
Clarence G. Wilson, St. Marys.

ERIE COUNTY (ERIE)

George S. Dickinson, 140 West Eighth St., Pres.
Maxwell Lick, 149 West Eighth St., Sec.
Fred Fisher, Jr., 324 East Sixth St.
John A. Darrow, 427 West Eighth St.
Chester H. McCallum, 219 West Eighth St.

FAYETTE COUNTY (CONNELLSVILLE)

Louis P. McCormick, 201 S. N. Bank Bldg., Pres.
James E. VanGilder, Uniontown, Sec.
Thomas B. Echard, 301 S. N. Bank Bldg.
Owen R. Altman, Uniontown.

FRANKLIN COUNTY

John K. Gordon, Chambersburg, Pres.
John J. Coffman, Scotland, Sec.
Leslie M. Kauffman, Kauffman.
Frank N. Emmert, Chambersburg.
James H. Swan, St. Thomas.

GREENE COUNTY

(*Entitled to one elective delegate.*)

Thomas Benton Hill, Waynesburg, Pres.
Harry C. Scott, Waynesburg, Sec.
Thomas N. Millikin, Waynesburg.
Robert W. Norris, Waynesburg.
Charles W. Spragg, Waynesburg.
Lindsey S. McNeely, Kirby.

HUNTINGDON COUNTY (HUNTINGDON)

Harry B. Fetterhoof, 630 Mifflin St., Pres.
John M. Beck, Alexandria, Sec.

INDIANA COUNTY

Howard B. Buterbaugh, Indiana, Pres.
Harry B. Neal, Indiana, Sec.

JEFFERSON COUNTY

Harry B. King, Reynoldsville, Pres.
Norman C. Mills, Eleanor, Sec.
John H. Murray, Punxsutawney.
William F. Beyer, Punxsutawney.
Forest L. Schumacher, Dubois.

JUNIATA COUNTY

Joseph S. Brown, Okeson, Pres.
Brady F. Long, Mifflin, Sec.
Isaac G. Headings, McAlisterville.
Amos W. Shelley, Port Royal.
Brady F. Long, Mifflin.

LACKAWANNA COUNTY (SCRANTON)

Harry W. Albertson, 2416 North Main Ave., Pres.
Frederick J. Bishop, 521 Connell Bldg., Sec.
William Rowland Davies, Traders Bank Bldg.
John J. Sullivan, Jr., Traders Bank Bldg.
Frederick P. Hollister, 508 Dime Bank Bldg.
John B. Grover, Peckville.
Lowell M. Gates, 802 Mulberry St.
John W. Lyons, Jessup.

LANCASTER COUNTY (LANCASTER)

Walter N. Keylor, Leacock, Pres.
Tobias C. Shookers, 146 North Prince St., Sec.
Frank G. Hartman, 136 North Duke St.
Tobias C. Shookers, 146 North Prince St.
Harry B. Roop, Columbia.
J. Paul Roebuck, 233 North Duke St.
Richard Reeser, Columbia.
Edgar J. Stein, 225 North Duke St.

LAWRENCE COUNTY

James K. Pollock, New Castle, Pres.
William A. Womer, New Castle, Sec.
William A. Womer, New Castle.
John Foster, New Castle.
Robert G. Miles, New Castle.

LEBANON COUNTY

Edwin Bell Marshall, Annville, Pres.
Charles M. Strickler, Lebanon, Sec.

LEHIGH COUNTY (ALLENTOWN)

Calvin J. Otto, 130 North Seventh St., Pres.
Willard C. Masonheimer, 130 N. Seventh St., Sec.
Frederick R. Bausch, 109 North Second St.

LUZERNE COUNTY (WILKES-BARRE)

Boyd Dodson, 186 Dana St., Pres.
Malcolm C. Guthrie, 109 South Franklin St., Sec.
Elmer L. Meyers, 239 South Franklin St.
Ernest U. Buckman, 70 South Franklin St.
Granville T. Matlack, 33 West Northampton St.
Lawrence H. Smith, 189 North Church St., Hazleton.
William F. Danzer, 226 West Broad St., Hazleton.
Lewis H. Taylor, 83 South Franklin St.

LYCOMING COUNTY (WILLIAMSPORT)

Charles J. Cummings, 755 West Fourth St., Pres.
Walter S. Brenholtz, 215 East Third St., Sec.
Walter S. Brenholtz, 215 East Third St.
Edward Lyon, 24 West Fourth St.
J. Elmer Schaefer, Cogan Station.
Joseph W. Albright, Muncy.
Randall B. Hayes, Jersey Shore.
William E. Delaney, 942 West Third St.

MC KEAN COUNTY

James B. Stewart, Bradford, Pres.
Charles F. Elliott, Bradford, Sec.

MERCER COUNTY

William W. Richardson, Mercer, Pres.
Frank M. Bleakney, Grove City, Sec.

MIFFLIN COUNTY

Samuel W. Swigart, Lewistown, Pres.
James A. C. Clarkson, Lewistown, Sec.
Chas. M. Johnson, McVeytown.
Alex. S. Harshberger, Lewistown.

MONROE COUNTY

Walter L. Angle, East Stroudsburg, Pres.
Esther W. Gulick, Stroudsburg, Sec.

MONTGOMERY COUNTY

Winfred J. Wright, Skippack, Pres.
Edgar S. Buyers, Norristown, Sec.
J. Newton Hunsberger, Norristown.
J. Lawrence D. Eisenberg, Norristown.
Edgar S. Buyers, Norristown.
George F. Hartman, Port Kennedy.
Richard H. Harris, Elkins Park.
John E. Gotwals, Phoenixville.

MONTOUR COUNTY

Harold L. Foss, Danville, Pres.
Cameron Shultz, Danville, Sec.

NORTHAMPTON COUNTY (EASTON)

William P. O. Thomason, 813 N. Thirteenth St., Pres.
Frederick E. Ward, 1119 Ferry St., Sec.
Wm. L. Estes, 805 Delaware Ave., South Bethlehem.
Walter D. Chase, Bethlehem.
Delbert K. Santee, South Bethlehem.
William H. McIlhaney, 602 Wilkes-Barre St.
James J. Quiney, 309 Bushkill St.
Paul E. Schwarz, 1004 Washington St.

NORTHUMBERLAND COUNTY

George W. Reese, Shamokin, Pres.
Horatio W. Gass, Sunbury, Sec.

PERRY COUNTY

Edward E. Moore, New Bloomfield, Pres.
Lenus A. Carl, Newport, Sec.

PHILADELPHIA COUNTY (PHILADELPHIA)

(*Entitled to eighteen elective delegates.*)

Frank C. Hammond, 3311 North Broad St., Pres.
William S. Wray, 2007 Chestnut St., Sec.
(Term Expires in 1918.)
Herman B. Allyn, 501 South Forty-Second St.
John H. Musser, Jr., 121 South Twentieth St.
Samuel Ellis, 6203 Elmwood Ave.

J. Montgomery Baldy, 2219 DeLancey St.
John A. McGlinn, 113 South Twentieth St.
Henry Beates, Jr., 260 South Sixteenth St.
John D. McLean, 1538 South Broad St.
George P. Muller, 1729 Pine St.
George E. Shoemaker, 1831 Chestnut St.
John W. West, 1125 Wallace St.
John A. Roddy, 5108 Haverford Ave.
John J. Robrecht, 3940 Chestnut St.
Charles F. Nassau, 1831 Chestnut St.
Henry K. Mohler, 5037 Florence Ave.
Alfred Heineberg, 1642 Pine St.
Frank C. Hammond, 3311 North Broad St.
Howard D. Geisler, 35 High St., Gtn.
Albert C. Buckley, Friends Hosp., Fkd.
Howard A. Sutton, 314 South Fifteenth St.
Norman L. Knipe, 701 South Fifty-Second St.
Benjamin A. Thomas, 116 South Nineteenth St.
Martha Tracy, 5138 Wayne Ave., Gtn.
Dorothy Donnelly, 213 Green Lane, Rxb.
Randle C. Rosenberger, 2330 North Thirteenth St.
Frederick Hurst Maier, 2035 Chestnut St.
Harry L. Merscher, 2217 North Broad St.
Henry D. Jump, 4634 Chester Ave.
Francis Ashley Faught, 5006 Spruce St.
Mitchell P. Warmuth, 1701 Chestnut St.

(Term Expires in 1919.)

Wilmer Krusen, 127 North Twentieth St.
Rae S. Dorsett, 1729 Arch St.
Harry A. Duncan, 2615 West Somerset St.
Paul J. Pontius, 1831 Chestnut St.
Joseph A. Moore, 1216 North Sixth St.
Jesse O. Arnold, 4149 North Broad St.
William S. Wray, 2007 Chestnut St.
Sarah H. Lockrey, 1701 Chestnut St.
Thomas R. Currie, 512 West Lehigh Ave.
George A. Knowles, 4812 Baltimore Ave.
William N. Bradley, 1825 Chestnut St.
Stuart C. Runkle, 1605 Christian St.
L. Webster Fox, 303 South Seventeenth St.
Lida Stewart Cogill, 1831 Chestnut St.
J. Allen Jackson, Phil. Hosp. for Insane.
Ernest G. Maier, 1323 North Fifteenth St.
Henry G. Godfrey, 2054 East Cumberland St.
Maxwell Herman, 325 Pine St.
Daniel Longaker, 1402 North Sixteenth St.
Thomas J. Byrne, 1517 South Broad St.
Tello J. d'Apery, 767 North Fortieth St.
J. Bernard Mencke, 908 North Sixteenth St.
L. Demme Bauer, 1713 West Girard Ave.
Albert E. Blackburn, 3813 Powelton Ave.
F. Mortimer Cleveland, 5211 Walnut St.
Charles V. Dorwarth, 1520 Erie Ave.

POTTER COUNTY

John H. Page, Austin, Pres.
Elwin H. Ashcraft, Coudersport, Sec.

SCHUYLKILL COUNTY

Joseph L. Warne, Pottsville, Pres.
George R. S. Corson, Pottsville, Sec.
Christian Gruhler, Shenandoah.
William J. Winters, Shenandoah.
J. Pierce Roberts, Shenandoah.
William T. Williams, Mount Carmel
George H. Moore, Schuylkill Haven.
William J. Scanlan, Shenandoah.

SNYDER COUNTY

G. Edgar Hassinger, Middleburg, Pres.
Percy E. Whiffen, McClure, Sec.
Percy E. Whiffen, McClure.
G. Edgar Hassinger, Middleburg.

SOMERSET COUNTY

Carl W. Frantz, Confluence, Pres.
H. Clay McKinley, Meyersdale, Sec.

SULLIVAN COUNTY

Hugh K. Davis, Sonestown, Pres.
Carl M. Bradford, Forksville, Sec.

SUSQUEHANNA COUNTY

H. D. Washburn, Susquehanna, Pres.
Edward R. Gardner, Montrose, Sec.

TIOGA COUNTY

William C. Wilson, Morris Run, Pres.
Solomon P. Hakes, Tioga, Sec.
Wilmot G. Humphrey, Elkland.
W. A. DeWitt, Blosburg.
S. P. Hakes, Tioga.

UNION COUNTY

Ralph Steans, Lewisburg, Pres.
Amos V. Persing, Allenwood, Sec.

VENANGO COUNTY

Lewis E. McBride, Franklin, Pres.
J. Irwin Zerbe, Franklin, Sec.
Paul J. McLain, Oil City.
Lewis E. McBride, Franklin.

WARREN COUNTY (WARREN)

Otis S. Brown, 6 Pennsylvania Ave. W., Pres.
Edwin S. Africa, 304 Liberty St., Sec.
Harry W. Mitchell, State Hospital for Insane.

WASHINGTON COUNTY

John H. Carey, Prosperity, Pres.
Charles C. Cracraft, Claysville, Sec.
William Douglass Martin, Dunns Station, R. D. 2.
James H. Corwin, Washington.
Charles C. Cracraft, Claysville.
John B. McMurray, Washington.

WAYNE COUNTY

Edward O. Bang, South Canaan, Pres.
Sarah A. Bang, South Canaan, Sec.
Alexander M. Cook, South Canaan.
Allan A. Berlin, Newfoundland.
Pierson B. Peterson, Honesdale.

WESTMORELAND COUNTY

Edward M. Clifford, Greensburg, Pres.
Myers W. Horner, Mt. Pleasant, Sec.
Harry W. Tittle, New Florence.
James P. Strickler, Scottdale.
Charles D. Ambrose, Ligonier.
Bert Haughwout, Derry.
Florence L. Marsh, Mt. Pleasant.
R. E. Lee McCormick, Irwin.

WYOMING COUNTY

Kennard J. French, Factoryville, Pres.
Herbert L. McKown, Tunkhannock, Sec.

YORK COUNTY (YORK)

Benjamin A. Hoover, Wrightsville, Pres.
Homer D. Baird, 452 S. George St., Sec.
George E. Holtzapple, George and Princess Sts.
John E. DeHoff, 485 West Market St.
David C. Posey, Bragueville.
Alfred A. Long, 34 South Beaver St.
Homer D. Baird, 452 South George St.
Joseph C. Atkins, Red Lion.

Preliminary Program

GENERAL MEETING

BELLEVUE-STRATFORD HOTEL

Tuesday, September 24, 10 a. m.

Call to Order by the President.
Walter F. Donaldson, Pittsburgh.

Prayer.
Most Reverend D. J. Dougherty, D.D., Archbishop of Philadelphia.

Address of Welcome.
Hon. Thomas B. Smith, Mayor of Philadelphia.
Frank C. Hammond, Philadelphia, President of the Philadelphia County Medical Society.

Presentation of Program.
Oskar Klotz, Pittsburgh, Chairman of the Committee on Scientific Work.

Announcements of Entertainments.
George A. Knowles, Philadelphia, Chairman of Committee on Arrangements.

Introduction of Delegates from Other Societies.

Installation of the President-Elect.

No. 1.

President's Address.
Frederick L. Van Sickle, Olyphant.

(The stenographer will collect all papers as soon as they are read.)

No. 2.

The Interpretation of the Manifestations of Shock.
Charles Claude Guthrie, Pittsburgh.

Outline. Problems and purposes of such studies. Technical and other limitations in experimental shock. Comparison of the conditions induced with the conditions in human shock. Alterations in tissue composition and function in experimental shock and their significance. Classification. Treatment. Theories.

No. 3.

The Treatment of Surgical Shock in Military Surgery. John B. Roberts, Philadelphia.

Outline. Discussion of theories as to pathology of shock; differential diagnosis; general treatment; local treatment; relation to fat embolism; preferable methods of treatment in civil and military surgery.

Discussion on preceding two papers opened by Samuel James Meltzer, New York.

No. 4.

War and the Child.
Samuel McC. Hamill, Philadelphia.

Outline. The effect of the war on the population of the warring countries and the influence of these results in stimulating child welfare work in these countries. He will point out the procedures which have been followed in developing child welfare work in the different warring nations, including the United States, and will refer specifically to the work as it is being carried out in Pennsylvania.

Stenographer—Miss L. C. Alexander, 313 S. Seventeenth St., Philadelphia.

Wednesday, September 25, 9 a. m.

No. 5.

Follow-Up System of the Pennsylvania Department of Health for Former Tuberculous Patients.
Carl Schaffle, Harrisburg.

Outline. Description of the department's sanatorium and dispensary system, with details of operation. Various reasons for which a patient may be discharged from department's rolls; condition of such patients on discharge; their subsequent fate. History and description of follow-up methods; difficulties; efforts toward their solution; charts showing results of thousands of face-to-face interviews, since 1911, between department's nurses (130) and such former patients, giving social and economic as well as physical and mental conditions; special forms used in such inquiry. Comparison between condition at time of follow-up of patients who had had sanatorium treatment and those who had home treatment conducted from dispensaries; examples of nurses' reports. Emphasis on importance of this system as proper measure for determining value of campaign against tuberculosis and money expended thereon.

SYMPOSIUM ON INTERNAL SECRETION

No. 6.

Some General Considerations. The Ductless Glands in Military Practice.
Charles E. deM. Sajous, Philadelphia.

Outline. Influence of ductless glands on efficiency of the soldier and on his resistance to disease and infection. Diseases, medical and surgical, in which ductless glands play an important part. Relationship between these organs and recovery from wounds. Use of organotherapy in military practice, medical and surgical.

No. 7.

Hyperthyroidism and Related Conditions.
David Linn Edsall, Boston, Mass.

Outline. Discussion of diagnosis and treatment of hyperthyroidism and hypothyroidism and conditions resembling them clinically, particularly from standpoint of basal metabolism and the light it throws on determination of the existence of these conditions, the severity, the effects of treatment, etc.

No. 8.

Internal Secretions as Factors in Gynecology and Obstetrics. F. Hurst Maier, Philadelphia.

Outline. Development and integrity of female genital organs and their functions dependent on all the organs of internal secretions. Ovaries only a part, although a very essential part, of the system. Disease or removal of an organ affects not only special (genital) but general metabolism. These facts offer explanation for the many psychic disturbances, menstrual aberrations and metabolic disorders of pregnancy. Disorders in connection with development of female genital organs and their functions; those affecting sexual characteristics and functions in already normally developed and functionally active organs. Importance of conservatism in surgery of genital organs. Their removal not only deranges genital functions, but functions of the other secretory glands with its consequent effects on general metabolism. Value of gland medication in correcting these conditions.

Discussion on preceding three papers opened by John A. Lichty, Pittsburgh, and Silas D. Molyneux, Sayre; E. Bosworth McCready, Pittsburgh.

No. 9.

The Present Status of the Treatment of Syphilis. (Lantern Demonstration.)
Jay F. Schamberg, Philadelphia.

Outline. Principles underlying treatment of syphilis. Use of arsphenamin. Frequency of administration, dosage and duration of treatment. To what extent be guided in treatment by the Wassermann reaction? Status of mercury in syphilis therapy. Treatment and prevention of syphilis of the nervous system.

Discussion opened by Francis X. Dercum and William E. Robertson, Philadelphia.

No. 10.

A Method of Tracheotomy without Loss of Blood. (Lantern Demonstration.)
Donald Guthrie, Sayre.

Outline. History of tracheotomy. Its indications. Danger of inspiration pneumonia if blood is inspired in the trachea. Description of the method without loss of blood based on the anatomic arrangements of the deep and superficial veins.

Discussion opened by George P. Miller, Philadelphia.

Stenographer—Mrs. M. C. Repp, 926 S. Sixtieth St., Philadelphia.

Thursday, September 26, 2 p. m.

No. 11.

The Reeducation of the Injured Soldier.
Major R. Tait McKenzie, C.A.M.C., Philadelphia.

Outline. A discussion on the mode of caring for the disabled soldier.

No. 12.

The Cardiovascular Problem in the Aviation Recruit.
James I. Johnston, Pittsburgh.

Outline. Impressions received in examining several hundred candidates for aviation; detailed analyses of the cardias of a hundred or more. Their blood pressure readings and return rate to normal pulse after forced exertion. History of many candidates being athletes; frequency of murmurs over precordia, apparently from no organic base, was noticeable. Repeated findings of true organic murmurs transmitted to vessels away from heart, particularly the subclavian of left side, but not constant. Arrhythmia not noted in these groups so frequently as among the general run of patients past middle life in ordinary practice. Tachycardia not frequent unless associated with true thyroid toxemia.

Discussion opened by Thomas G. Simonton, Pittsburgh.

No. 13.

Occupational Diseases Peculiar to War Time.
J. W. Schereschewsky, Pittsburgh.

No. 14.

Social Medicine. Alfred Stengel, Philadelphia.

No. 15.

Medical Complaints, and New Phases of Previously Recognized Conditions, Due to War Emergency.
James M. Anders, Philadelphia.

Outline. Vincent's angina; increased incidence during present war, predisposing causes; diagnosis and treatment. New phases of pneumonia, rôle of the *Streptococcus hemolyticus.* The war in relation to the tuberculosis problem. Disordered action of the heart of soldiers; the tachycardias of soldiers; causes and clinical features; proneness to make a diagnosis of valvular heart disease; treatment. War edema, its causes, symptoms, treatment. Trench nephritis; its clinical characteristics, resemblance to scarlatinal nephritis; favorable prognosis; treatment.

No. 16.

The Fixed Full-Time Staff in the Organization of the Small Hospital. Harold L. Foss, Danville.

Outline. Advantages of permanent, salaried staff, particularly as applied to the rural hospital. Salary versus fee plan. Organization of departments. Concentration of authority and responsibility. Relationship of such an organization to the general practitioner. The matter of fees and the handling of benevolence. How such a plan is being worked out at the Geisinger Memorial.

Discussion opened by J. Montgomery Baldy, Philadelphia, and William H. Mercur, Pittsburgh.

No. 17.

Some Blood Changes in Rats on Cancer Inhibiting and Cancer Stimulating Diets.
Ellen P. Corson-White, Philadelphia.

Outline. Brief study of some blood changes in rats on various diets. The effect of these diets on the blood and on (1) growth and nutrition of rats; (2) takes, growth energy, and metastases of the experimental tumor; (3) length of life of animal after inoculation.

Unfinished Business.

Announcement of Committees by the President.

Adjournment.

Stenographer—Miss L. C. Alexander, 313 S. Seventeenth St., Philadelphia.

SECTION ON MEDICINE

Officers of Section

Chairman—Irwin J. Moyer, 3525 Forbes St., Pittsburgh.

Secretary—George E. Holtzapple, 203 S. George St., York.

Executive Committee—Thomas Grier Simonton, Pittsburgh; J. Wesley Ellenberger, Harrisburg; David Riesman, Philadelphia.

Stenographer—Miss L. C. Alexander, 313 S. Seventeenth St., Philadelphia.

(The Secretary of the Section will collect all papers as soon as they are read.)

Tuesday, September 24, 2 p. m.

No. 1.

Address by the Chairman.
Irwin J. Moyer, Pittsburgh.

No. 2.

Pneumonia—Cause and Treatment.
William J. K. Kline, Greensburg.

Outline. The microbe pneumococcus is given as the cause. Whence the germ? In the oxidation of body tissues a monoxid gas is evolved which escapes through the pores of the skin and through the lungs. Change of temperature, electric storm and shock contract the pores of the skin. Congestion, exudation, secretions follow and form pabulum similar to agar in developing microbes as shown by Professor Fritchie.

Discussion opened by Charles Rea, York.

No. 3.

Some Recent Results of Coordination of Laboratory and Clinical Researches in Pneumonia.
Solomon Solis-Cohen, Philadelphia.

Outline. Report of results of coordinated research by Drs. Kolmer, Heist, Steinfeld, Weiss and the author, showing the chemotherapeutic activity of cinchona derivatives against pneumococcus in vitro and in vivo; the inferiority of optochin to ordinary quinin compounds in human pneumonia; pneumonia poison in the human lung; inhibiting effect of quinin on this and pneumotoxins; Lacy-Heist method of studying immunological power of whole circulating blood. Immunity of certain individuals and birds against pneumonia. Bacterins (vaccination) and quinin mouth washes as preventives.

Discussion opened by David Riesman, Philadelphia.

No. 4.

Laboratory Methods—Their Value and Practicability in General Medicine.
M. Howard Fussell, Philadelphia.

Outline. The paper will deal first with the methods of laboratory work which are necessary in making diagnoses, in conditions met every day by the general practitioner (spinal punctures, staining of sputum, making of throat cultures, the examination of the blood, the necessity of Wassermann reactions, roentgen-ray examinations). There will be shown a kit which makes it practicable for every practitioner to do this work himself, or to have it done by his assistant.

Discussion opened by Henry Rhea Douglas, Harrisburg.

No. 5.

X-Ray Examination of Heart and Great Vessels.
George W. Grier, Pittsburgh.

Outline. Abnormalities in the size, shape and location of the heart. Dilatation of the various chambers, singly and in combination. Pericardial effusion. Dilatation of the pulmonary artery. Prevalence of broadening of ascending aorta, not aneurysmal in characteristics. Aneurysm of aorta, arch ascending and descending portions. Differentiation between aneurysm and solid tumors in the mediastinum, particularly mediastic carcinoma, sarcoma, enlarged glands, Hodgkin's disease, enlarged thymus, enlarged substernal thyroid, leukemia, syphilitic glands.

Discussion opened by William H. Mercur and Frederick B. Utley, Pittsburgh.

No. 6.

Some Drug Eruptions.
Milton B. Hartzell, Philadelphia.

Outline. Drug eruptions very frequent and their symptoms manifold, the same drug producing different eruptions in different subjects; difficulties of diagnosis and the reasons therefor; some of the less well-known eruptions produced by the salts of iodin and bromin; veronal and other eruptions produced by hypnotics; arsenical dermatoses and their special importance.

Discussion opened by Julius H. Comroe, York.

No. 7.

The County Medical Inspector's Place in Preventive Medicine.
Clarence R. Phillips, Harrisburg.

Outline. Unnecessary disease should be prevented. The contagious diseases are largely preventable. A cursory glance at the age incidence of these diseases shows that they are diseases of childhood. One of the greatest reasons for this fact lies in compulsory education which brings all children of a community into close contact for five hours every day five days in the week. As compulsory education is a necessity and therefore cannot be abandoned, this problem of preventive medicine is distinctly "up to the state." The instrument for such protection in the present scheme of the state department of health is the county medical inspector.

Discussion opened by Wilmer Krusen, Philadelphia.

Wednesday, September 25, 2 p. m.

Report of Executive Committee.

Election of Officers.

No. 8.

One Hundred Cases Treated with Autogenous Vaccines.

William A. Womer, New Castle.

Outline. Vaccine—definition and varieties. Indications and uses. Conditions amenable to vaccine treatment. Case reports on infections of skin and subcutaneous tissues, ears, teeth, nasal sinuses, urinary tract, joints, eyes, endocardium. Adjuvants to vaccine therapy.

Discussion opened by Walter D. Blankenship, Lancaster.

No. 9.

The Problem of Combating Septicemias, with Special Reference to Arsphenamin and Allied Compounds.

Samuel R. Haythorn, Pittsburgh.

Outline. Stages in the course of septicemic infections; factors which make successful treatment difficult. Necessary qualifications of an efficient therapeutic agent. The action of arsenical compounds in vitro. The results of treating septicemia in animals with arsenical preparations. Valuable clinical indications derived from animal studies. Results of application of the treatment to puerperal infections, medical and surgical conditions. Apparent indications for and probable limitations of the treatment.

Discussion opened by Harold A. Miller and Frederick B. Utley, Pittsburgh.

No. 10.

Diagnosis of Pulmonary Tuberculosis by Physical Examination. (15 min.)

Louis V. Hamman, Baltimore, Md.

Outline. The value of the physical examination in the diagnosis of pulmonary tuberculosis will depend on what we wish to diagnose. Physical signs indicating pulmonary changes often present in the absence of any other evidence of pulmonary disease, aside from unusually marked change in percussion, and in the character of the breath sounds, râles are the most reliable objective indication of activity. The great importance of distinguishing clinically active from inactive lesions. The part physical signs play in this distinction. The most important question to answer at the present time is the relation that exists between the extent of pulmonary changes not due to active disease and the probability of developing active disease under conditions of unusual hardship and exposure.

Discussion opened by Elmer H. Funk, Philadelphia, and Charles H. Miner, Wilkes-Barre.

No. 11.

The Roentgen-Ray Diagnosis of Pulmonary Tuberculosis.

Henry K. Pancoast, Philadelphia.

Outline. Progress in roentgen diagnosis of lung diseases. Necessity for adequate knowledge of lung anatomy, pathology and clinical aspect of lung disease. Recognition of certain general characteristic roentgen appearances for each manifestation of tuberculous disease corresponding to accepted pathological features is essential for accurate diagnosis. To be accurate roentgen diagnoses must be checked up by subsequent histories of cases and postmortem findings in a large number of instances. Many other conditions may be confused with pulmonary tuberculosis and considerable experience is necessary to differentiate them.

Discussion opened by J. Wesley Ellenberger, Harrisburg.

No. 12.

Essential Hypertension. (15 min.)

Herman O. Mosenthal, Baltimore, Md.

Outline. It is important to recognize this disease, which thus far is characterized by the presence of one symptom only. There is no pathological physiology of the organism of which we are aware that brings about hypertension. It exists in a great number of individuals and usually results in severe lesions in the heart, brain or kidney, which are the cause of death. The diagnosis of essential hypertension can be made with certainty only when the tests for renal function are available. Without them, the diagnosis is a matter of surmise only. The treatment of this malady involves some of the most intricate questions in metabolism, and thus far there has been more theory than fact adhered to as a guide in managing these cases.

Discussion opened by Ross V. Patterson, Philadelphia.

No. 13.

Blood Pressure Abnormalities from the Standpoint of the General Practitioner.

Hobart A. Hare, Philadelphia.

Outline. The determination of what is the normal pressure for a given individual, and what may be done to raise or lower it if it is abnormal; second, the importance of considering the entire cardiovascular renal system as one rather than as isolated parts; third, the relationship of renal change to a high pressure, with remarks on the question of limiting diet; fourth, the possible bearing of disorders of internal secretion in such cases.

Discussion opened by Major Lawrence Litchfield, M. R. C., Pittsburgh.

No. 14.

Blood Pressure as a Prognostic Factor.

R. Max Goepp, Philadelphia.

Outline. Is there such a thing as "simple" hypertension not dependent upon arterial and renal changes? Emphasis laid on necessity of giving due consideration to associated factors in judging the prognostic value of blood pressure. Among these renal factors are: Age, sex, weight, and stature; circulatory and renal factors; metabolic disturbances, especially glycosuria and lithiasis. Recent statistics compiled from life insurance experience. Diastolic and pulse pressure readings. Low blood pressure. Prognostic significance in acute infections; in chronic disease.

Discussion opened by Charles H. Willits and Francis Ashley Faught, Philadelphia.

No. 15.

The Results of Tests for Food Protein Sensitiveness in a Small Group of Asthmatics.

Alexander Sterling, Philadelphia.

Outline. These asthmatics did not show any sensitiveness when tested with twenty-five different food proteins, except one patient who did give a positive skin reaction to four different food proteins.

Discussion opened by Gordon J. Saxon, Philadelphia.

Thursday, September 26, 9 a. m.

No. 16.

The Treatment of Syphilis of the Central Nervous System.

Thomas Palmer Tredway, Erie.

Outline. Early involvement of central nervous system by syphilis necessitates early diagnosis. Examination of cerebrospinal fluid equally important as examination of blood serum in suspected syphilis. Value of Wassermann test, cell count, globulin and colloidal gold. Wassermann test of special value in studying case during treatment. Pathological types classified as vascular, exudative and parenchymatous (Swift). Prognosis of case can be determined according to type under treatment. Intraspinal methods in common use: (1) auto-arsphenamized serum; (2) arsphenamin in small quantities added to serum; (3) mercurialized serum; (4) arsphenamin in small quantities added directly to the fluid. The latter my choice of method. Technic used is that devised by Wile of Ann Arbor. Dosage from .1 to .3 mg. I have had no bad results with this method over a period of nearly three years. Reaction is very slight and it can often be given at same time with an intravenous injection of arsphenamin. Report of cases.

Discussion opened by Loraine L. Schwartz, Pittsburgh.

No. 17.

Observations on the Treatment of Cerebrospinal Syphilis by Intraspinal Injections of Auto-arsphenamized Serum.

Benjamin A. Thomas, Philadelphia.

Outline. These observations represent the clinical results in twenty-five cases treated during the past four years.

Discussion opened by Jay Frank Schamberg, Philadelphia.

No. 18.

Nervous and Mental Sequelae Following Infectious Diseases. Alfred Gordon, Philadelphia.

Outline. This study embraces fifty-two cases. Patients were observed for several years after recovery from the original infectious process. Typhoid fever, scarlet fever, measles, influenza, pertussis and pneumonia were the affections studied. The motor, sensory and psychic spheres, also the special senses were investigated. Conclusions.

Discussion opened by Theodore Diller, Pittsburgh.

No. 19.

The Application of the Principles of Advanced Psychiatry. J. Allen Jackson, Philadelphia.

Outline. These principles are expressed in the functions of mental hygiene; they combine the knowledge gained in custodial institutions with community forces and thereby promote community service. These may be applied to local rural communities, municipalities or state. In large communities with population over 500,000 community service could best be obtained through a municipal bureau of mental hygiene. The indications for such a bureau, its organization and function with immediate and ultimate results as outlined would warrant a practical application.

Discussion opened by John A. Lichty, Pittsburgh, and Max H. Bochroch, Philadelphia.

No. 20.

The Duties, Responsibilities and Rights of the Members of the Patient's Family.
Theodore Diller, Pittsburgh.

Outline. There are problems regarding the patient's social relations with which physicians are called on to deal; this paper is an attempt to discuss a few of them which have impressed themselves on the author's mind.

Discussion opened by Edgar M. Green, Easton, and Samuel J. Waterworth, Clearfield.

No. 21.

Prognosis in Cases of Intestinal Perforation in Typhoid Fever Without Operation.
Charles W. Eisenhower, York.

Outline. From views of the general practitioner, not engaged in textbook writing, we are led to believe that recoveries from intestinal perforation in typhoid fever, without operation, occur more frequently than our textbooks would have us believe. In some instances of intestinal perforation, we find evidence of a protective plastic peritonitis of a local character preventing escape of bowel contents with recovery of the patient. Prognosis of intestinal perforation in typhoid fever is grave, too much so to warrant any departure from universally accepted treatment by immediate surgical interference.

Discussion opened by Solomon Solis-Cohen, Philadelphia, and David S. Funk, Harrisburg.

No. 22.

Report of a Case of Pellagra.
Loraine L. Schwartz, Pittsburgh.

Outline. The disease developed during the spring of 1907, and recurred each spring until 1914. From 1914 until 1916 patient enjoyed good health; in November, 1916, had a recurrence with all the previous symptoms intensified and a general jaundice. Final recurrence Aug. 14, 1917, ending fatally Sept. 9, 1917.

Discussion opened by Clement R. Jones and James I. Johnston, Pittsburgh.

No. 23.

Report of a Bacteriological Study of the Dispersion and Deposition, in a Community, of a Form of Micro-organism Previously Foreign to the Community.
Andrew T. McClintock, Wilkes-Barre.

Discussion opened by J. Irving Roe, Wilkes-Barre.

SECTION ON SURGERY

Officers of Section

Chairman — John L. Atlee, 129 E. Orange St., Lancaster.

Secretary — T. Turner Thomas, 1905 Chestnut St., Philadelphia.

Executive Committee—Floyd E. Keene, Philadelphia; Levi J. Hammond, Philadelphia; A. Ralston Matheny, Pittsburgh.

Stenographer—Mrs. Miriam C. Repp, 926 S. Sixtieth St., Philadelphia.

(The Secretary of the Section will collect all papers as soon as they are read.)

Tuesday, September 24, 2 p. m.

No. 1.

Address by the Chairman.
John L. Atlee, Lancaster.

No. 2.

An Anatomical Incision for Inguinal and Femoral Hernia. J. Norman White, Scranton.

Outline. This vertical incision makes all operations in the inguinal regions almost bloodless, preserves the veins, arteries and lymphatics intact and gives easy access to the inguinal canal and femoral ring. Anatomy of this region. If femoral mistaken for inguinal hernia new incision not necessary. Preservation of normal blood and lymph supply renders infection and filling of wound with fluid less frequent.

Discussion opened by Reed Burns, Scranton.

No. 3.

Rapid Advance of Surgery of the Chest. The Result of Experiences in the War.
George P. Müller, Philadelphia.

Outline. No other advances in surgical technic in the present war have been so brilliant as that of surgery of the chest. Experience shows that the thorax can be opened freely and the lung handled with the same readiness as are the intestines in an abdominal operation. This technic is applicable to surgery of the chest seen in civil practice, and surgeons should be familiar with it. Purpose of this communication is to call attention to application of methods of Duval and others to civil surgery.

No. 4.

Concerning the Absence of Clinical Symptoms During the Preperforative Stage of Duodenal Ulcer.
Levi Jay Hammond, Philadelphia.

Outline. Causes of such absence. Analysis of the pathological findings in the series of patients operated on.

Discussion opened by Frank Alleman, Lancaster.

No. 5.

The Treatment of Malignant Disease by Combined Methods, Surgery, Electrocoagulation, Roentgen Ray and Radium. (Lantern Demonstration.)
George E. Pfahler, Philadelphia.

Outline. All of these methods have been demonstrated to be useful, and more patients can be gotten well by skillfully combining methods than by one method. When practical, a conference should take place between surgeon and roentgenologist before treatment, and best procedure can then be followed. Surgery important for removal of metastatic glands and of malignant disease in neighborhood of important nerves and blood vessels; electrocoagulation especially useful in treatment of lesions of mucous membrane; radium useful in treatment of malignant disease within cavities, and x-ray helpful in all malignant cases, preferably after a surgical operation or electrocoagulation.

Discussion opened by William L. Clark, Philadelphia.

No. 6.

Some of the Postoperative Sequelae of Acute Appendicitis. John B. Deaver, Philadelphia.

Outline. A consideration of some of the secondary postoperative phenomena of acute appendicitis, such as fecal fistula, secondary abscess and intestinal obstruction.

Discussion opened by Harry J. Donaldson, Williamsport.

No. 7.

Radiographic Diagnosis of Ileocecal Valve Incompetency. Mulford K. Fisher, Philadelphia.

Outline. Anatomy and physiology of the ileocecal valve. Symptoms of incompetency. Difficulty of diagnosis by clinical methods. Ileac stasis. X-ray diagnosis of incompetency. Technic of examination. Fluoroscopy vs. skiagraphy. Illustrative cases with x-ray findings before and after operation. Lantern slides.

Discussion opened by J. Thompson Schell, Philadelphia.

Wednesday, September 25, 2 p. m.

Report of Executive Committee.

Election of Officers.

No. 8.

An Experimental Study of Abdominal Adhesions. (Lantern Demonstration.)
Moses Behrend, Philadelphia.

Outline. A test of all the solutions used in preparation of skin before operation. Their influence in formation of adhesions. Use of wet and dry sponges on peritoneal surfaces. A method for preventing formation of adhesions. Conclusions.

Discussion opened by George W. Reese, Shamokin.

No. 9.

A Report of an Operation Designed to Correct Large Cystoceles in Young Women, and to Permit Future Childbearing.
John Cooke Hirst, Philadelphia.

Outline. Modification of the Watkins interposition operation in that the upper stitch grasps the uterus in upper third of its anterior wall, so that uterus is held under bladder and not sharply anteverted. Of 89 patients, 49 were traced; of these 49, 5 had had children since the operation without recurrence of the cystoceles.

Discussion opened by Collin Foulkrod, Philadelphia.

No. 10.

Aseptic Technic in Obstetrics.
Charles G. Strickland, Erie.

Outline. Sepsis far more common than ordinarily realized. Hospitals as well as individuals to blame. Cause primarily due to failure to extend to delivery room the essential technic of operating room and to unnecessary handling of patient. Doctor, hospital or nurse nearly always to blame.

Discussion opened by Alfred Heineberg, Philadelphia.

No. 11.

Acute Osteomyelitis in Children.
Alfred C. Wood, Philadelphia.

Outline. Diagnosis usually not made in earliest stages. Immediate diagnosis and prompt treatment only means of reducing present mortality and of lessening the percentage of deformity and impaired function. Suggestions in regard to diagnosis. No case should be treated medically. Surgical treatment.

Discussion opened by Walter Estell Lee, Philadelphia.

No. 12.

Bone Growth and Degeneration. (Lantern Demonstration.) Stewart L. McCurdy, Pittsburgh.

Outline. Lantern slides to show growth and degeneration of bone in the chronic dietetic conditions, including hereditary influences, in first group; influence of various pathologic infective processes on growth and degeneration, in second group; and regeneration in bones that have been subjected to surgery, in third group.

Discussion opened by A. Bruce Gill, Philadelphia.

No. 13.

Fractures of the Neck of the Femur.
Royal Whitman, New York.

Outline. Lantern demonstration, with remarks.

Discussion opened by William L. Estes, South Bethlehem.

No. 14.

Acute Dilatation of the Stomach Following Operation.
John J. Gilbride, Philadelphia.

Outline. Etiology, pathology, symptoms, diagnosis and treatment.

Thursday, September 26, 9 a. m.

This meeting will be devoted to the problems of Military Orthopedic Surgery, under the Direction of the Division of Orthopedic Surgery of the Surgeon-General's Office at Washington. A more definite program will be announced later, when the Surgeon-General's Department will be better prepared to emphasize the most important phases of the work and to provide the best speakers.

SECTION ON EYE, EAR, NOSE AND THROAT DISEASES

Officers of Section

Chairman — Edward Stieren, Union Arcade, Pittsburgh.

Secretary—Adolph Krebs, Jenkins Arcade, Pittsburgh.

Executive Committee—Robert Milligan, Pittsburgh; Clarence M. Harris, Johnstown; John F. Culp, Harrisburg.

Stenographer—Dr. Harry S. Reger, Jamestown, N. Y.

(The Secretary of the Section will collect all papers as soon as they are read.)

Tuesday, September 24, 2 p. m.

No. 1.

Address by the Chairman.
Edward Stieren, Pittsburgh.

No. 2.

Autogenous One-Piece Epithelial Grafts for the Restoration of the Eyelids; with the Report of Cases. Edward B. Heckel, Pittsburgh.

Outline. Description of the technic and the report of a series of cases with drawings and photographs before and after operation.

Discussion opened by William Campbell Posey, Philadelphia.

No. 3.

Variations in the Clinical Picture of Interstitial Keratitis. Aaron Brav, Philadelphia.

Outline. Interstitial keratitis a hereditary disease of syphilitic origin. May be confirmed by serologic tests. Frequency of disease. Variations in clinical picture, due to resisting power of individual, and difference in virulence of causative agent in passing from one host to another. Nonvascular type. Vascular type. Variations in objective manifestations; in degree of vascularization; in onset and local exciting causes; in course and complications; in ultimate result. Changes in refractive status. Essential local and constitutional treatment.

Discussion opened by Samuel D. Risley, Philadelphia.

No. 4.

Pemphigus Vulgaris; with Report of a Case.
John B. McMurray, Washington.

Outline. In certain membranous conditions of the mouth, throat and conjunctiva in which the usual laboratory serological examinations do not definitely establish the diagnosis, pemphigus should be seriously considered. Report of a case.

Discussion opened by William W. Blair, Pittsburgh.

No. 5.

Diseases of the Uveal Tract and Their Sequelae.
Samuel D. Risley, Philadelphia.

Outline. From standpoint of etiologic factors in affections of the choroid, ciliary body and iris; e. g., autotoxemia, the infections, cardiac vascular disease and systemic disorders.

Effects which follow diseases of uveal tract over the nutrition of vitreous body and crystalline lens; and variations in tension of eyeball.

Discussion opened by WILLIAM ZENTMAYER, Philadelphia.

No. 6.

Corneal Corpuscular Activity (Third Paper). A Study of the White Corpuscle as Suggested by the Observance of Its Circulation Through the Cornea. JOSEPH E. WILLETTS, Pittsburgh.

OUTLINE. The white corpuscle. Its varieties. Its chemic base, alexins, habitat and functions. Its relation to the nutrition of the nonvascular cornea.

Discussion opened by BURTON CHANCE, Philadelphia.

No. 7.

The Operative Treatment of Incomplete Cataract. JOHN WELSH CROSKEY, Philadelphia.

OUTLINE. It is not to be denied that a uniformly sclerosed lens fully ripe or mature is more readily and satisfactorily extracted. Is it advisable, however, to allow the profession and the laity to believe that this is the only opportune time for operation. Cataract occurring in the aged, when time is so valuable, justifies us in removing the lens when one eye has a partially developed cataract and the other a beginning one.

Discussion opened by T. CHALMERS FULTON and E. FOREST KAMERLY, JR., Philadelphia.

No. 8.

Report of Three Cases of Ligation of the Common Carotid Artery and Resection of the Orbital Veins in Pulsating Exophthalmos. Report of Several Cases of Orbital Tumor, with Operation. WILLIAM CAMPBELL POSEY, Philadelphia.

Discussion opened by EDWARD A. WEISSER, Pittsburgh.

WEDNESDAY, SEPTEMBER 25, 2 P. M.

Report of Executive Committee.

Election of Officers.

No. 9.

The Requisite Attributes of Properly Fitted Spectacles and Eye Glasses. (With demonstration.) SIDNEY L. OLSHO, Philadelphia.

OUTLINE. Oculist responsible for proper filling of his prescription. Spectacles and eyeglasses surgical appliances. Dispensing optician under supervision of oculist who should be master of the mechanics and familiar with material of spectacles and eyeglasses. Glasses should be subject to rigid scrutiny in regard to type, comeliness and adaptability; their quality and durability; workmanship in assembling; size, shape and focus of lenses; position of frames and lenses in relation to eyes and face. Necessity for knowing when frames or mountings do not fit. Method of securing and insuring continued correct axial position of cylindric lenses.

Discussion opened by ADOLPH KREBS, Pittsburgh.

No. 10.

Disciform Keratitis. ADOLPH KREBS, Pittsburgh.

OUTLINE. Report of cases, with drawings and photographs.

Discussion opened by GLENDON E. CURRY, Pittsburgh.

No. 11.

Plastic Surgery of the Face and Orbit in Relation to War Injuries. (Lantern Demonstration.) HUNTER W. SCARLETT, Philadelphia.

OUTLINE. Wounds of face and orbit are divided into two classes, early and late. Early wounds are not usually infected, and can be sutured immediately, after thorough cleansing. Late wounds are always infected. First treatment consists in removing all foreign material, excising devitalized tissue and thorough irrigation with salt solution, or one of the hypochlorite of soda derivatives. Edges are approximated toward normal position. Light dressing applied, or none at all. Later reparative procedure will depend on the size, position and form of cicatrix which results. Operations relying on properly selected pediculated flaps generally prove most successful.

Discussion opened by JOHN B. ROBERTS, Philadelphia.

No. 12.

Ocular Evidences of Pathology of the Ethmoidal Labyrinth. HUNTER H. TURNER, Pittsburgh.

OUTLINE. Pathology of accessory nasal sinuses has been but little understood, and its importance, with relation to neighboring organs and general economy, gravely underestimated. A vast number of these conditions have gone undetected and the victim condemned to a life of semi-invalidism, because ocular evidences have been unappreciated as such, and findings of rhinologist, based on diagnostic measures at his command, have been insufficient to warrant a definite diagnosis as to intrasinus conditions. Owing to contiguity, and to a very intimate relationship in vascular, lymphatic and nerve supply, the eye seldom escapes involvement in these cases, and is a very dependable medium for interpretation of intrasinus disease.

Discussion opened by BREESE M. DICKINSON and G. CLYDE KNEEDLER, Pittsburgh.

No. 13.

Rhinological Diagnosis of Disease of the Accessory Sinuses. GEORGE W. STIMSON, Pittsburgh.

OUTLINE. A study of the various symptoms with an analysis of their comparative diagnostic value.

Discussion opened by RALPH BUTLER and HENRY K. PANCOAST, Philadelphia.

THURSDAY, SEPTEMBER 26, 9 A. M.

No. 14.

The Technic of Nasal Cleansing. WILLIAM A. HITSCHLER, Philadelphia.

OUTLINE. Nasal douching a fetish among the laity and of too common prescription by the profession. A habit with many; when properly done is of considerable service; when improperly done may be prolific of harm, especially in acute infections. Of such universal usage that no patient and but few physicians appreciate the principles involved and the wisdom of careful technic. With very few exceptions patients should be advised against the practice of nasal douching. Technic of safe douching.

Discussion opened by KATE W. BALDWIN, Philadelphia.

No. 15.

Duration of Bronchoscopy and Esophagoscopy, Based on an Experience of 650 Cases. CHEVALIER JACKSON, Philadelphia.

OUTLINE. Mortality of bronchoscopy and esophagoscopy considered apart from the condition for which the procedure was undertaken. Analysis of cases showing absence or mildness of reaction following a short bronchoscopy in uncomplicated cases. Influence of age on reaction. Influence of the presence of pus and advisability of avoiding trauma. Deductions as to advisable duration for different ages. Table of illustrative cases.

Discussion opened by ROSS HALL SKILLERN, Philadelphia.

No. 16.

Esophageal Stenosis. Report of Cases. ELLEN J. PATTERSON, Pittsburgh.

OUTLINE. Stenosis of esophagus following swallowing of caustic alkali. Danger of "water hunger." Indications for gastrostomy. Foreign body complicating stenosis. Treatment. Recovery.

Discussion opened by CHEVALIER JACKSON, Philadelphia.

No. 17.

Blood Conservation in Tonsillectomy. CHARLES P. GRAYSON, Philadelphia.

OUTLINE. Title intended to cover not only severe but also ordinary hemorrhage of tonsillectomy. Minimizing blood loss during operation an advantage to both operator and patient.

Some of the "bloodless" operations. Questions of technic and of certain preventive measures. Relative merits of the ligature, suture of pillars and simple pressure.

Discussion opened by John B. McMurray, Washington.

No. 18.

Tonsillectomy Under Local Anesthesia.
George B. Jobson, Franklin.

Outline. Advantages: Eliminates dread of general anesthetic, pain slight, or absent in most cases; less hemorrhage, less shock. Not suitable for children. Method: Morphin ⅛ grain, atropin 1/150 grain hypodermically, one-half hour before operation. Operation: Tonsils, pharynx, soft palate, and base of tongue swabbed with 6 per cent. cocain solution. Tonsils retracted from "bed" and latter flooded with 1 per cent. solution procain or one of its substitutes, and a few drops of adrenalin. Wait ten minutes. Tonsil drawn toward center of pharynx. With Day knife separate pillars, keeping close to tonsil. Remove tonsil with snare, keeping pedicle of tonsil on stretch. Swab cavity with glycerite of tannin.

Discussion opened by Richard E. Brenneman, Pittsburgh.

No. 19.

Practical Deductions from Sixteen Years' Practice as a Nose, Throat and Ear Specialist.
J. Leslie Davis, Philadelphia.

Outline. A review consisting largely of author's personal experience in the field of prophylaxis, diagnosis and treatment of diseases of nose, throat and ears, setting forth various theories tested and methods employed, old or new, accepted or discarded, previously advanced or original, and resulting successes or failures from which has been evolved his present conclusions, principles and practices.

Discussion opened by George Morrison Coates, Philadelphia.

SECTION ON PEDIATRICS

Officers of Section

Chairman—Percival J. Eaton, 715 N. Highland Ave., Pittsburgh.

Secretary—William N. Bradley, 1825 Chestnut St., Philadelphia.

Executive Committee—Samuel McC. Hamill, Philadelphia; Percival J. Eaton, Pittsburgh; William N. Bradley, Philadelphia.

Stenographer—Miss Marguerite H. Lewis, Box 54, Oakland St., Pittsburgh.

(The Secretary of the Section will collect all papers as soon as they are read.)

Tuesday, September 24, 2 p. m.

No. 1.

Address by the Chairman. Percival J. Eaton, Pittsburgh.

No. 2.

The Fallacies of the Methods of Giving Colonic Irrigations in Children.
H. Brooker Mills and Gustavus C. Bird, Philadelphia.

Outline. Object of paper is to call attention to the more common errors in methods of giving colonic irrigations and misinterpretations of ways in which results are obtained. It is hoped by use of roentgen ray to show a number of improvements in technic, and to simplify the use of this most beneficial form of treatment.

Discussion opened by Frederick C. Hutton, Philadelphia.

No. 3.

Weaning Edwin E. Graham, Philadelphia.

Outline. Importance of breast feeding. Most American mothers can be persuaded to try to nurse their babies. Almost all deaths occur in bottle-fed infants. Mistake to wean a baby because it does not gain a certain number of ounces each week or because it vomits occasionally, has abdominal pain or the stools are not normal in color and consistency. Modified cow's milk may supplement each breast feeding, or an entire bottle feeding given once or oftener each day. Analysis of breast milk. Cases where breast milk cannot be made to agree with the baby are rare. If possible, do not wean in hot summer months. When and how a baby should be weaned.

Discussion opened by Walter Chrystie, Bryn Mawr.

No. 4.

Moving Picture Film Showing Pyloric Stenosis.
Harry Lowenburg, Philadelphia.

Outline. Synonymous expression. Present nomenclature confusing and should be changed. Clinical classification better than pathological. Should distinguish pyloric obstruction complete, incomplete, surgical, nonsurgical. Symptomatology of foregoing. Differential diagnostic table. Treatment.

No. 5.

Pyloric Stenosis, Illustrated by X-Ray.
Charles M. Woodburn, Towanda.

Outline. History; etiology; symptoms; diagnosis; prognosis and treatment. Report of cases.

Discussion on preceding two papers opened by J. P. Crozer Griffith and John B. Deaver, Philadelphia.

Wednesday, September 25, 2 p. m.

Report of Executive Committee.

Election of Officers.

No. 6.

Protecting Our Third Line of Defense, Our Babies.
Lida Stewart Cogill, Philadelphia.

Discussion opened by Jane R. Baker, West Chester.

No. 7.

Hirschsprung's Disease.
Walter Lester Carr, New York City.

Outline. Hirschsprung's disease of macrocolon is rare, and since its first description, in 1880, not many cases have been observed. General symptoms are to be differentiated from those caused by peritonitis and adhesions, and a plan of treatment carried out. Usually medical care is sufficient, but cases may require surgical intervention.

Discussion opened by J. P. Crozer Griffith, Philadelphia.

No. 8.

The Use of the Laboratory as an Aid in the Treatment of Diabetes. (15 Min.)
Leon Jonas, Philadelphia.

Outline. A discussion of the newer biochemical tests, especially those available for the practitioner and the general hospital. Report of a case of diabetes in a young boy with apparent recovery as shown by laboratory tests.

No. 9.

Better Methods in the Immediate Attentions to the Newborn. Jesse O. Arnold, Philadelphia.

Outline. Data showing need of better methods. First attention to the eyes; relative merits of solutions used. Clearing of mouth and respiratory tract; a practical aspirating device. Treatment of chord and umbilicus; comparison of various methods; author's experience and results. Asphyxia; efficient and harmless methods of resuscitation versus the obsolete methods still too generally taught and practiced.

Discussion opened by Vernon D. Thomas, Pittsburgh, and Herbert A. Bostock, Norristown.

No. 10.

Backward, Nervous and Delicate Children; Their Treatment and Management. (15 Min.)
E. Bosworth McCready, Pittsburgh.

Outline. Extent and significance of mental and physical deviation in children of the present day not given proper consideration by the medical profession. Danger signals are early apparent and on their recognition depends the future of the child. Prophylactic and remedial measures; their application. Hygiene, medical and educational management with illustrative cases.

Discussion opened by J. Madison Taylor, Philadelphia.

Thursday, September 26, 9 a. m.

No. 11.

A Consideration of the Most Common Rectal Diseases in Children.

Herman A. Brav, Philadelphia.

Outline. Diseases of the rectum are not very common in children but some of them are occasionally met with. Hemorrhoids are rarely observed in children. Prolapsus recti frequently occurs; the prognosis is good and the treatment simple. Polypus recti is not uncommon, and is the most common cause of rectal hemorrhage; in girls it is often mistaken for precocious menstruation; it is frequently mistaken for hemorrhoids or procidentia recti. Anal fissure is more common in infants than in older children. Fistula in ano is a rare affection in children. Treatment.

Discussion opened by William M. Beach, Pittsburgh.

No. 12.

Studies in the Serum Treatment of Epidemic Cerebrospinal Meningitis.

John A. Kolmer, Philadelphia.

Outline. Recent advances in our knowledge of the bacteriology of meningococcus meningitis; methods of bacteriological diagnosis. Treatment with specific serum; the influence of normal serum upon treatment.

Discussion opened by Samuel S. Woody, Philadelphia.

No. 13.

Appendicitis in Childhood.

John J. Gilbride, Philadelphia.

Outline. In abdominal pain, cramps or colic, in children, one should bear in mind the possibility of appendicitis. Pain may not be severe, sometimes not attracting attention. Early diagnosis more difficult in children than in adults.

Discussion opened by Harvey F. Smith, Harrisburg.

No. 14.

Vernal Conjunctivitis; Its Treatment by Applications of Radium.

Edward A. Shumway, Philadelphia.

Outline. Description of disease; its manifestations in the eyelids and ocular conjunctiva; its satisfactory response to treatment. Report of cases greatly improved by applications of radium.

Discussion opened by Edward B. Heckel, Pittsburgh.

No. 15.

Some Influences of Diet Affecting the Second Dentition. John F. Sinclair, Philadelphia.

Discussion opened by Robert K. Rewalt, Williamsport.

YOU ARE DOING IT

Every time you read, you purchasers of Liberty Bonds and War Savings Stamps, of what the United States is doing in France in building wharves and railroads, or deluging the Germans with gas or shelling them out of position with big guns or shrapnel, or of bombing their arsenals or cities, or of the great work of our Army and our Navy, or of the building of ships here, or of any or all of the great or small achievements of America, here or abroad or on the seas, you buyers of Liberty Bonds and War Savings Stamps truthfully can say, "I had a hand in this"; "I contributed to this"; "I am helping do this"; "It is part my work."

THE TRUTH ABOUT MEDICINES

NEW AND NONOFFICIAL REMEDIES

Since publication of New and Nonofficial Remedies, 1918, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Associaton for inclusion with "New and Nonofficial Remedies":

Chlorine Soda Ampules. — Composed of a sealed glass tube stated to contain 4.8 Gm. liquid chlorine and a sealed glass tube stated to contain 21.3 Gm. monohydrated sodium carbonate and yielding, when the contents of the tube are dissolved in 1,000 Cc. of water, a solution similar in composition to Neutral Solution of Chlorinated Soda-N. N. R. To prepare the solution the contents of the tube of monohydrated sodium carbonate are placed in a bottle having a capacity of about 2,000 Cc. and dissolved in 1,000 Cc. water. The tube containing the liquid chlorine is suspended from a rubber stopper and is inserted into the bottle and the stopper securely inserted. The large bottle (after covering with a cloth) is shaken to break the chlorine tube, the contents of the bottle are then shaken for two minutes or longer. The solution freed from particles of glass is ready for use, or its available chlorine may previously be checked by titration. The solution so obtained is intended for the Carrel-Dakin treatment of infected wounds. Johnson and Johnson, New Brunswick, N. J. (*Jour. A. M. A.*, July 6, 1918, p. 939).

Dextri-Maltose No. 2, Mead's. — A mixture containing approximately maltose, 53.1 per cent.; dextrin, 42.6 per cent., and moisture, 4.3 per cent. On the claim that maltose is more readily assimilable than other forms of sugar, Mead's dextri-maltose No. 2 is proposed for use in the diet of adult invalids. Mead Johnson & Co., Evansville, Ind.

Dextri-Maltose No. 3, Mead's. — A mixture containing approximately maltose, 52 per cent.; dextrin, 41.7 per cent.; potassium carbonate, anhydrous, 2 per cent., and moisture, 4.3 per cent. In the belief that an addition of potassium salts counteracts a tendency to constipation, it is said to be particularly adapted in the feeding of constipated infants. Mead Johnson & Co., Evansville, Ind. (*Jour. A. M. A.*, July 20, 1918, p. 193).

PROPAGANDA FOR REFORM

Chlorine Soda Ampules.—The A. M. A. Chemical Laboratory reports that the Chlorine Soda Ampules of Johnson and Johnson yield a solution containing the claimed amount of available chlorine if precautions are taken to prevent loss of chlorine when the solution is prepared. On the basis of the report, the Council on Pharmacy and Chemistry accepted the Chlorine Soda Ampules for New and Nonofficial Remedies (*Jour. A. M. A.*, July 6, 1918, p. 39).

Proteal Therapy.—Henry Smith Williams, who expounds the use of his "Proteals" for the treatment of cancer, tuberculosis and many other diseases, is better known in the journalistic world than in the field of scientific medicine. A few years ago, Dr. Williams appeared interested in the Autolysin treatment of cancer which at that time was being exploited. The present "Proteal" treatment appears to be a modification of the "Autolysin" treatment. Dr. Williams, in attempting to justify the use of his "Proteals" in tuberculosis, cancer, rheumatism, etc., takes advantage of certain investigations bearing on the nonspecific reactions resulting from the parenteral injection of foreign proteins (*Jour. A. M. A.*, July 6, 1918, p. 58).

Ophthalmol (Lindemann).—The Council on Pharmacy and Chemistry publishes a report declaring Ophthalmol (Lindemann) inadmissible to New and Nonofficial Remedies. The preparation is advertised for the treatment of eye diseases. It is said to be an oily solution of "glandular extract of the fish Cobitis fossilis," but its composition is not definitely declared. The Council rejected Ophthalmol (Lindemann) (1) because the use in eye of an irritant of secret composition and of uncertain activity is unscientific and against the interest of public health; (2) because Ophthalmol is of secret composition, and (3) because no evidence has been submitted to substantiate its superiority over established methods of treatment (*Jour. A. M. A.*, July 6, 1918, p. 59).

The Italian Consumption Cure.—Daily papers have purported to give an account of a new alleged cure for pulmonary tuberculosis said to have been "discovered" by Prof. Domenico LoManaco of Rome. The treatment is said to consist of the subcutaneous injection of sugar—the particular form of sugar not being specified. Italian medical journals and medical publications from other European countries appear to contain no reference to this latest "discovery" (*Jour. A. M. A.*, July 13, 1918, p. 142).

Silvol Inadmissible to N. N. R.—The Council on Pharmacy and Chemistry reports that Silvol (Parke, Davis & Co.) is a silver protein preparation of the Argyrol type. Its physical properties are similar to those of Argyrol, and, like Argyrol, it is said to contain about 20 per cent. of silver. Like Argyrol, it is non-irritant to the nasal mucosa in 10 per cent. solution. About the same claims are made for the local use of Silvol as are generally made for Argyrol, and these may be accepted. In addition, however, claims are made which are doubtful and which require substantiation. As the manufacturers have presented no evidence for their highly improbable claims, and as they have not signified any intention of making their claims agree with substantiated facts, the Council declared Silvol inadmissible to New and Nonofficial Remedies (*Jour. A. M. A.*, July 13, 1918, p. 140).

Doan's Kidney Pills.—A testimonial for Doan's Kidney Pills by Mr. Ford appeared in the Kankakee *Daily Republican*, nearly three months after he was dead and buried. The advertisement containing the testimonial said: "Follow Kankakee people's example, use Doan's Kidney Pills" (*Jour. A. M. A.*, July 13, 1918, p. 140).

Prescription A-2851.—Eimer and Amend write that the reported analysis of their "rheumatism remedy," Prescription A-2851, by the Louisiana State Board of Health was incorrect in that it failed to state that 45 per cent. of it was wine of colchicum and in that it contained 9.3 per cent. and not 7.5 per cent. of potassium iodide. On the basis of the manufacturer's statement, each dose of the remedy contains 27 minims of wine of colchicum—almost a full dose. Colchicum is so uncertain that its use in products of the home remedy type should be unhesitatingly condemned (*Jour. A. M. A.*, June 20, 1918, p. 215).

Valerol.—A rather expensively prepared advertising card, forwarded by a medical officer in France to the Surgeon-General's Office in Washington, read: Urinary Duets—Ancient and Recent Runnings—Cystitis, Prostaticis, Filaments—Speedy and Radical Recovery by means of the Vaderol—Used in the Urologicals Establishments of the Armies. The card is an interesting evidence of the attempt of a French patent medicine maker to exploit the English speaking soldier now in France (*Jour. A. M. A.*, July 20, 1918, p. 215).

Dependability of Tablets.—There is no doubt about the convenience of tablets, but the accuracy of the dosage content is not always to be depended on. In 1914, Kebler reported the results of a far-reaching investigation of tablet compounding in which he pointed out that tablets on the market were not as uniform or accurate as was generally believed. During the past year, the Connecticut Agricultural Experiment Station undertook the examination of tablets—proprietary and nonproprietary—taken from the stock of dispensing physicians. The variations found in weights of the tablets were strikingly similar to those reported by Kebler. Allowing a tolerance in composition of 10 per cent., one or more product of the following manufacturers were found deficient: Buffington Pharmacal Company; Daggett and Miller Company; Drug Products Company; the Harvey Company; National Drug Company; B. F. Noyes Company; Progressive Chemical Company; Tailby-Nason Company, and John Wyeth & Brother (*Jour. A. M. A.*, July 27, 1918, p. 300).

A QUESTION AND AN ANSWER

Many of us in the great army of stay-at-homes chafe over our inaction during this war time and ask, "How can I help?" The editor of the Brooklyn *Eagle* gives this answer:

"Those who regard the sale of War Savings Stamps as a side enterprise or as something that appeals mainly to children totally miss the purpose behind a plan which is one of the best thus far evolved for war purposes. In the last analysis the selling of these stamps is the fitting of the whole nation to sustain the burden of the war. It is the application to war finance of the principle of universal service. It aims to enlist all of the American people in direct support of that gallant minority among them who have answered the call to arms and prepared themselves for the firing line.

"The War Savings Stamps supply the final and conclusive answer to the question: 'How can we all help?' "

SELF-DETERMINATION

Much unhappiness could be avoided if we would only permit people the luxury of their own peculiarities and not desire so ardently to make them over according to our own mould. This world would be a poor place without the stimulus of diversity, yet each one of us instinctively desires to make it all over on his own pattern. If this constructive impulse were devoted to *making ourselves over*, seeking a rounded development inclusive of all types and temperaments, things would be better.—Elizabeth Severn: *The Psychology of Behaviour.*

THE PENNSYLVANIA MEDICAL JOURNAL

Official Organ of the Medical Society of the State of Pennsylvania

VOLUME XXI
NUMBER 12

ATHENS, PA., SEPTEMBER, 1918

SUBSCRIPTION:
$2.00 PER YEAR

ORIGINAL ARTICLES

FOOD ANAPHYLAXIS AND METHODS OF MAKING TESTS *

ALBERT STRICKLER, M.D.
Assistant Dermatologist, Philadelphia General and Samaritan Hospitals; Assistant Professor of Dermatology, Temple University Medical School; Instructor in Dermatology, Philadelphia Polyclinic
PHILADELPHIA

By anaphylaxis we mean a condition of unusual or exaggerated susceptibility of the organism to foreign protein. It is this phase of the question which concerns us in this discussion.

While the symptoms and lesions of general anaphylaxis are fairly well understood, the mechanism of the phenomenon cannot be regarded as definitely established, and this is particularly recognized when attempting to formulate an explanation of the mechanism of the cutaneous anaphylactic reaction. This explanation must include the immediate reaction to small doses of anaphylactogen as well as those reactions which follow some hours, and indeed days, after the intracutaneous or subcutaneous injection of various proteins.

At the present time there are two main theories concerning the mechanism of anaphylaxis: (1) The humoral or chemical theory, which maintains that anaphylaxis is due to a poison derived from a protein matrix, through the interaction of anaphylactogen and its antibody or a ferment in the blood; and (2) the physical or cellular theory which maintains that the anaphylactogen unites with its antibody in the cell, and that this union results in a disturbance causing shock of the cell.

Skin or local anaphylactic reactions have many of the features of an inflammatory reaction, in which hyperemia and edema are prominent features. Cutaneous anaphylaxis is regarded as due to an interaction between a true antigen and its specific antibody with the production of a diffusible irritant capable of exciting inflammation. This union of antigen and antibody is believed to occur principally within the cell, and the cells suffer largely by reason of this interaction between them.

These cutaneous reactions very often last a number of days. Since food anaphylaxis represents an interaction between a true antigen in the form of a protein extract of a food and its specific antibody located within the body cells, and this interaction results in the production of a diffusible irritant capable of producing inflammation, we have, in the anaphylactic food tests, a most valuable method for the detection of those diseased processes which may be due in whole or in part to a hypersusceptibility on the part of the body to one or more food proteins.

There are two accepted methods of conducting the anaphylactic food tests. (1) The endermic and (2) the intradermic.

1. The endermic method advocated by Dr. White of Boston consists in removing the upper layers of the epidermis of the flexor surface of the forearm in eight places, in two parallel rows of four by rotation of a dental burr. Some of the abrasions are used for testing various proteins, such as milk, egg, albumin, oatmeal, etc., and some are used as controls. It is stated that very rarely does the traumatism produce reaction. Patients vary, but as a rule the height of the reaction is seen in about thirty minutes. A positive reaction is characterized by the appearance of a papule, never a wheal or a vesicle. Various degrees of positive reaction are observed.

Fifty-six cases of eczema in patients of varying ages were studied by this method by Dr. White, with the following conclusions: (a) Eczema in children is due, in a certain percentage of cases, to excessive fat or sugar in their diet, or to egg albumin or milk; or, in a minority of instances, to the diminished thyroid secretion. Approximately 20 per cent. of individuals afflicted with eczema are not sensitive to the common foods. (b) Normal people do not react to these foods. (c) Food anaphylaxis may also be a factor in urticaria, and also possibly in acne vulgaris. (d) In eczematous individuals tested, approximately 30 per cent. of the controls were positive when this method was employed. The author believed that this reaction could be con-

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* Read before the Section on Medicne, Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 27, 1917.

sidered as analogous to dermographism observed in urticaria.

2. The intradermic method which I prefer consists in the introduction of a solution of a food protein in the layers of the skin by means of a hypodermic needle. As a result of this procedure a white wheal is produced at the point of injection and often there is a reddened zone around the blanched spot. This is conceded to be the most delicate method which can be employed in conducting the endermic skin test.

The amount injected in this method is 0.1 c. c. In none of our cases were there any evidences of a constitutional reaction of any nature whatever. We adopted the following standard as to what constituted a positive reaction. (1) A papule must be present at the point of injection. (2) In the vast majority of cases a zone of erythema is found around the papule. (3) Tenderness is often found at the point of injection. (4) The lesion must persist for more than twenty-four hours after the injection. Our practice is to wait for forty-eight hours before reading the reaction. This period of time, to our mind, is the most important factor in reading the reaction, as by this means we obviate errors due to traumatism of injection, and also rule out fleeting reactions due to any irritant.

The various causes of skin reactions may be summarized as follows: (1) The true or specific anaphylactic reaction is due to the interaction in the skin of a specific protein antigen and a specific antibody. (2) The pseudo or nonspecific protein reaction is due to the interaction in the skin of general protein substances and nonspecific proteolysins. (3) The traumatic reaction, consequent upon the operation, or to the irritant qualities of such substances as preformed bacterial toxins and various preservatives, such as phenol contained in the injected material.

This brief review of the possibilities of error in reading these skin reactions should impress upon our minds the necessity of ruling out nonspecific reactions, and in our experience the element of duration of the lesion is the best criterion to go by. We therefore emphasize the necessity of waiting forty-eight hours after the injection to make sure that all our reactions are specific. It is also our custom to inject our diluent each time the test is performed with the idea in mind to rule out pseudo reaction.

In none of our cases were there manifestations of the soreness of the arm or enlargement of the neighboring lymphatic glands.

We studied fifty-four patients with eczema and the great majority of them were kept under observation for some weeks. Our plan has been, whenever possible, to withhold local treatment entirely, to see what benefit, if any, diet exerted on the course of the eruption, both as to subjective and objective phenomena.

In our studies of food anaphylaxis the following proteins were employed: Cow casein, egg, beef, mutton, pork, chicken, fish, oysters, clams, crabs, wheat, oatmeal, rice, barley, tomato, and strawberries. The method of preparing these materials has been published in another paper. In brief, our method consisted in extracting the protein by the use of weak alkali, and after shaking and incubating the solution it was filtered, absolute alcohol was added, and the solution evaporated on a water bath. A saturated solution of this dry material was made in an alkalinized sodium chlorid solution. These preparations were tested for sterility, and for their nitrogen contents, by the Kjeldahl method.

From a study of Table 1 it can be seen that twenty-eight patients, or 52 per cent., were in a greater or lesser degree benefited by a changed diet, as shown by the anaphylactic food test. In thirteen cases, or 25 per cent., the food tests were entirely negative, and in the remainder the correction of diet, as shown by the food tests, did not have any influence on the disease.

A few of the cases are worthy of comment.

Case 1.—Private patient consulted me about two years ago for a recurrent erythematous eczema of arms and hands of four years' duration. He was under the care of a number of dermatologists, who advised him to discontinue his work. This eczema would come on every summer. He was a cabinet maker and was compelled to use glue which had to be in a liquid form and was constantly subjecting himself to great heat. The anaphylactic food tests showed tomato $+^2$ and shell fish $+^1$. These foods were discontinued and a cure resulted in about three weeks with no recurrence up to date. After he was advised to discontinue tomatoes, he volunteered the information that as soon as tomatoes were in season, he would live practically on this article of diet, and almost coincident with this the eczema would recur.

Case 2.—Private patient; notes communicated to writer by courtesy of Dr. J. F. Schamberg. Mrs. H. M., aged 45 years, has suffered for fifteen years from an urticarial eczema, characterized by sheets of closely aggregated small papules accompanied by violent itching. The eruption was extremely fugacious, lasting about a day or two, then disappearing and shortly reappearing. The patient likewise suffered from nervousness and tremendous gaseous distention of the abdomen with distressing colicky pains. She had consulted clinicians in New York City and Philadelphia over a period of years. The food test gave $+^4$ cow casein reaction and clam $+^2$. Milk and milk foods were entirely eliminated from the diet. Within a few days the patient returned and said that a miracle had been performed. The abdomen had been reduced about 4 inches in diameter and at no time in

TABLE 1

1. Erythematous eczema	4 years	Arms and hands	24 years	Tomato $+^2$; shellfish $+^1$	Diet corrected and petrolatum locally	Cured in 3 weeks and remained so up to date
2. Eczema rubrum	4 years	Face	6 months	Cow casein $+^2$	Put on broth and plain paste locally	Marked improvement. Shortly after withdrawal of milk, lost from observation
3. Vesicular eczema	3 years	General	22 years	Cow casein $+^1$; wheatbread ±; tomato ±	Diet corrected; no local treatment	Cleared up completely in ten days and has remained so
4. Vesicular squamous	7 years	General	9 years	Cow casein $+^2$	Diet corrected later; Lassar's paste applied locally	Itching disappeared completely in about four days and the shin showed marked improvement after one week; patient discharged cured
5. Squamous eczema	weeks recurrent	Face, legs and scrotum	25 years	Wheat $+^1$; cow casein $+^4$; mutton sugg.; shellfish	Diet corrected; no local treatment	Marked improvement after two weeks; patient reported later practically well
6. Vesicular eczema	5 years recurrent	Face and hands	16 years	Cow casein $+^3$	Diet corrected and simply ointment	Marked improvement on diet and simple ointment. Later cured
7. Eczema seborrhoicum	......	Body	11 years	Cow casein $+^2$	Diet corrected; no local treatment	Cured in 3 weeks and discharged
8. Eczema erythematous	10 weeks	Body	42 years	Cow casein $+^2$; mutton $+^1$; fish $+^1$; shellfish ±	Diet corrected also local treatment	Improved rapidly on diet and local treatment and was cured after three weeks
9. Papulosquamous	2 years	Arms and legs	50 years	Cow casein $+^2$; clam $+^2$; pork $+^1$; mutton ±	Diet and a mild lotion	Markedly improved
10. Eczema rubrum	3 weeks	Face	....	Negative to all tests	Kept on milk formula	Improved on local treatment and modified formula
11. Chronic urticarial eczema	9 years	General	....	Cow casein $+^4$; clam $+^2$	Diet corrected	Very marked improvement in about 10 days
12. Squamous eczema	2 years	General	74 years	Cow casein $+^1$; lobster ±	Diet corrected	Subjective symptoms disappeared at once; skin condition not much improved
13. Squamous eczema	2 years	Buttock and face	5 years	Cow casein $+^2$; egg ±	Diet corrected	Itching ceased and rash markedly improved on diet alone
14. Vesicular eczema	3 months	Face, neck, hands	43 years	Egg $+^1$; cow casein $+^2$	Diet corrected and improvement was more rapid	Cured; diet, also local treatment
15. Dermatitis urticaria	6 months	Both legs	39 years	Cow casein $+^1$; tomato ±	Diet corrected	Improved on diet alone but not cured. Afterward local treatment added
16. Vesicular eczema	3 years recurrent	Both hands	36 years	Cow casein $+^1$; egg ±	Diet corrected	Slight improvement on diet alone
17. Eczema and onychia	Eczema 24 yrs. Onchyia 9 months	Eczema hands, Onychia fingers, toes	55 years	Cow casein $+^2$; mutton $+^1$; beef $+^1$; tomato $+^1$; pork $+^1$	Diet corrected	Improvement on diet alone; was soon lost from observation
18. Vesicular eczema	9 months	Arms and hands	30 years	Cow casein $+^1$; egg ±; oatmeal $+^1$	Diet corrected	Improved but not cured on diet alone
19. Seborrhoicum eczema	Several years	General	11 years	Cow casein +	Diet could not be carried out	Improving slightly on local treatment
20. Vesicular eczema	34 years recurrent	Hands	19 years	All tests negative		
21. Vesicular eczema	....	Hands	12 years	Cow casein $+^1$; wheat ±; tomato ±	Diet corrected	No improvement at all on diet
22. Erythematosquamous eczema	16 years	General	31 years	All tests negative		
23. Erythematosquamous eczema	3 years recurrent in summer	Arms, body, legs	36 years	Egg $+^1$; cow casein $+^2$; beef ±; pork $+^1$	Diet corrected	No influence on eruption
24. Squamous eczema	9 months	General	33 years	Tests negative		
25. Vesicular eczema	2 months	Hands and feet	22 years	Cow casein +; barley $+^1$; tomato $+^1$; wheat $+^1$; mutton $+^4$	Diet corrected	Some improvement on diet; improved more rapidly on addition of local treatment
26. Vesicular eczema	5 years recurrent	Hands	27 years	Tomato $+^1$; clam ±	Diet corrected	No improvement
27. Erythematosquamous eczema	8 weeks	Legs	35 years	Wheat $+^1$; cow casein ±	Diet corrected	Lost from observation
28. Papular eczema	3 years	Legs	28 years	Cow casein $+^4$; fish $+^2$	Diet corrected	No improvement on diet
29. Seborrhoicum eczema	6 weeks	Face and legs	31 years	Negative		
30. Seborrhoicum dermatitis	4 weeks	....	22 years	Cow casein $+^1$; beef $+^1$	Diet corrected	Lost from observation
31. Seborrhoicum dermatitis	7 months	Face and ears	....	Egg $+^2$; wheat $+^2$	Diet corrected	Slight improvement on diet alone and improvement more marked on addition of local treatment
32. Eczema	3-4 years recurrent	Arms, hands	56 years	Cow casein $+^3$; beef ±	Diet corrected	Some improvement on diet alone
33. Papular eczema	Some years	General	13 years	Negative		
34. Papulosquamous	3 months	Face and hands	60 years	Negative		

TABLE 1—*Continued*

35. Seborrhoicum dermatitis	8 years recurrent	General	52 years	Negative	....	Disease first originated from an attack of dermatitis venenata
36. Papular eczema	Unknown	Face and ears	19 months	Cow casein $+^{3}$; egg $+^{1}$	Diet corrected	Improved markedly on corrected diet; relapse when placed on prohibited articles of food
37. Squamous eczema	1 year	General	5 years			
38. Squamous eczema	22 years	General	64 years	Tomato $+^{2}$	....	Patient states that attack started while working in tomato patch
39. Squamous eczema	9 months	Legs and arms	65 years	Negative		
40. Erythematous eczema	3 weeks	General	34 years	Negative		
41. Papular eczema	6 months	Scalp and face	32 years	Negative	....	Cured by taking a vacation
42. Erythemato-squamous	5 years	General	61 years	Negative		
43. Papular	3 months	General	47 years	Tomato ±; fish $+^{2}$	....	Lost from observation
44. Vesicular eczema	2 years recurrent	Hands	28 years	Mutton $+^{1}$; cow casein $+^{2}$	Diet corrected	No improvement
45. Eczema	18 months	Legs	54 years	Beef ±; pork ±; cow casein $+^{3}$	Diet corrected	Lost from observation
46. Vesicular eczema	Several mos.	Hands	38 years	Negative	Diet corrected	Lost from observation
47. Squamous eczema	5 years	Hand, fingers	21 years	Oysters ±; clams ±; beef $+^{1}$; bread $+^{2}$; cow casein $+^{1}$; egg $+^{1}$	Diet corrected	Cured
48. Vesicular eczema	3 years	Arm and face	....	Eggs $+^{2}$; bread +; herring ±	Diet corrected	Cured
49. Eczema	4 months	Face and body	1 year	Cow casein $+^{2}$; wheat $+^{2}$; egg ±	Diet corrected	Cured
50. Eczema	1 year	General	65 years	Cow casein $+^{2}$; pork $+^{1}$; wheat ±; fruit ±	Diet corrected	Improved
51. Eczema	8 years	Hands	....	Bread ±; cow casein $+^{1}$	Diet corrected	Improved
52. Squamous eczema	16 years	Hands	35 years	Herring ±; clams ±; cow casein $+^{4}$	Diet corrected	Not improved
53. Chronic eczema	....	....	....	Herring +; eggs +	....	No improvement
54. Erythematous eczema	....	Face, arms		Negative		

years had she been so comfortable. The eruption had about 90 per cent. disappeared. The full extent of this improvement was not maintained in the subsequent weeks of observation, but the patient was infinitely better than she had been for many years.

Case 3.—A young lady, 22 years of age, consulted us at the Polyclinic Hospital for a recurrent vesicular eczema of three years' duration. The eczema involved hands, arms, legs and body in patches. Her food reaction showed cow casein $+^{1}$, bread ±, tomato ±. After being placed on the corrected diet without local treatment, her skin cleared up in ten days and has remained so for over a year and a half.

Case 4.—Patient, 9 years of age, under our service in the Philadelphia Hospital. She was afflicted with a vesiculosquamous eczema of seven years' duration involving her entire body. The tests showed cow casein $+^{2}$; milk, butter, cheese and all foodstuffs containing milk were withdrawn from the diet. Her subjective symptoms cleared up in four days and the skin began to improve. She did not get any local treatment except vaselin. Later she was put on Lassar's paste in addition to her diet and was discharged from the hospital cured.

Case 8.—Private patient referred by Dr. Falls, aged 42 years; diagnosis, erythematous eczema of ten weeks' duration involving the body. The food tests showed cow casein $+^{2}$, mutton $+^{1}$, fish $+^{1}$, shellfish ±. Her diet was corrected and she received some local treatment and in about three weeks was well. When her diet was modified she stated that her general health improved. She had more ambition to work, she was less nervous and her shortness of breath was completely gone; in fact she felt like a different woman. Without our consent she went back to her old diet, and in about three days she had a recurrence of her skin trouble, which disappeared promptly after taking a purge. She is still on the diet and is feeling fine without evidence of eczema.

Case 9.—Private patient, referred by Dr. McDevitt, aged 50 years, had papulosquamous eczema of two years' duration, involving arms and legs. Food tests show cow casein $+^{2}$, clam $+^{2}$, pork $+^{1}$, mutton ±. His diet was corrected, and a mild lotion given; he showed prompt improvement both as to subjective and objective symptoms. By mistake he ate pork and beans and the next day a new crop of papules developed, which subsided on taking a purge. This patient has been suffering four years with constipation and this condition has also shown great improvement since he has been on this diet.

Case 47.—W. K., private case, consulted us for a squamous eczema of hands and fingers of five years' duration. Patient had consulted a number of physicians and was a patient at the University Hospital Skin Clinic for one year.

The anaphylactic food tests disclosed positive reactions with oysters, clams, bread, milk, beef and eggs. These articles of food were eliminated from his diet and, with the use of vaselin alone, in six weeks the patient made a complete recovery and has remained well now for six months.

CASE 48.—Mrs. S., private patient, a vegetarian, consulted us for a vesicular eczema recurrent for the last three years, involving both arms and also the face. Patient was under the care of the Jefferson Medical College Skin Clinic for some time. The anaphylactic food tests were positive to eggs $+^2$, beans ±, the meats and fish were negative. She was placed on a meat and fish diet and in about two weeks the patient recovered and has remained well for nine months. Never during the last three years has the patient remained free from eruption longer than two or three months.

CASE 49.—Baby L., private patient referred by Dr. Blitzstien. This patient, 1 year of age, developed a vesicular eczema of the face and neck, duration, four months. At the time the child was seen by us the patient had an eczema rubrum. The anaphylactic food tests show eggs ±, cow casein $+^2$, wheat $+^2$. The child was placed on buttermilk and broth diet and made a rapid and complete recovery.

TABLE 2

1. Urticaria	5 months	38 years	All negative	
2. Urticaria; no lesions; history	2 weeks	29 years	Cow casein +; fish +	No improvement on corrected diet
3. Urticaria	4 months	38 years	Cow casein $+^1$; oatmeai ±; egg ±	No improvement on corrected diet
4. Urticaria	4 months recurrent	30 years	Tests negative	
5. Urticaria, acute	3 days	33 years	Mutton $+^1$; beef $+^1$; egg $+^1$	Diet corrected, no recurrence since correction of diet
6. Urticaria	5 weeks	22 years	Cow casein ±; fish ±; pork ±; oatmeal±	Disappeared from observation
7. Urticaria	4 days	15 years	Cow casein $+^3$; fish ±	Itching stopped almost immediately after correction of diet
8. Urticaria	5 years	31 years	Tomato $+^1$; oatmeal ±; clam ±	Diet corrected, but no influence on the itching
9. Urticaria	1½ years	38 years	Cow casein ±; mutton $+^1$	Slight influence on correction of diet
10. Urticaria	4 days	19 years	Crab $+^1$	Attack due to eating crabs; attack quickly subsided
11. Erythema	2 weeks	24 years	Cod $+^2$; herring $+^2$; oysters $+^1$; pork $+^1$; veal $+^1$; beef $+^1$	Diet corrected patient cleared up in a few days
12. Erythema	Recurrent for years last about five days	....	Oysters $+^2$; clams ±; all meats ±	Patient lost from observation
13. Urticaria	5 days	....	Cod $+^2$; egg $+^2$	Cleared up immediately when diet was corrected

TABLE 3

1	56	Psoriasis; recurrent 15 years	Pork $+^1$; cow casein $+^4$	No improvement
2	40	Psoriasis, with superimposed eczema	Cow cassein ±	Lost from observation
3	30?	Psoriasis of 12 years' duration	Cow casein $+^2$; shell fish $+^1$	Diet corrected; patient thinks she has improved
4	50	Psoriasis	Negative	
5	50	Psoriasis	Negative	
6	45	Psoriasis	Negative	
7	17	Psoriasis	Negative	
8	40	Psoriasis	Negative	
9	63	Psoriasis	Negative	
10	16	Psoriasis	Negative	
11	17	Psoriasis	Cow casein $+^2$	

URTICARIA

We studied thirteen patients with urticaria with the following results.

McBride and Schorer in their article, "Erythematous and Urticarial Eruptions Resulting from Food Sensitization," conclude that food may give rise to urticarial eruptions because it is not of the proper quantity, or because it is not properly chosen and prepared, or that certain proteins, no matter how simple they may be, prove harmful to the human structure. In our series of thirteen cases eleven showed positive anaphylactic food reactions, while two were entirely negative. In this series five were acute and the remaining eight were chronic. In the acute cases the removal of the offending article caused a rapid subsidence of the eruption, and these tests serve as a guide to ward off further attacks.

In chronic urticarial skin conditions, we do not feel very hopeful. We do not believe that the presence of a positive anaphylactic food reaction holds out much hope for a cure in our patients. It is admitted that our series is small and that a larger experience may cause a change in our present views.

PSORIASIS

We studied eleven patients suffering with psoriasis. In this series four gave positive reaction and seven were entirely negative. Only in one case was there some improvement in the eruption following the installation of corrected diet.

ACNE

We studied sixteen patients suffering with acne vulgaris and three with acne rosacea. Out of this number there were five showing negative tests, while the remainder showed positive reactions. In none of our cases, although most of them were kept under prolonged observation, did any noticeable improvement follow the corrected diet.

CONCLUSIONS

1. The anaphylactic food tests are of value in the etiological diagnosis and in the treatment of various diseases of the skin.

2. In our experience these reactions find their greatest value in eczema, where the development of a strong positive reaction holds out great hope for an improvement or cure in the skin condition, and in some instances an amelioration of the associated gastro-intestinal disorder by exclusion of the incriminated article of food.

3. In chronic urticaria, acne vulgaris and psoriasis the results of these tests are disappointing, inasmuch as the information secured from the cutaneous tests had not as a rule led to therapeutic success.

4. A very weak reaction obtained by the intradermic injections, no matter what the food products may be, is not of convincing value, although it is advisable to correct the diet according to the findings. It is our practice where very weak reactions are obtained to give diet a trial for a few weeks, and if no improvement follows the anaphylactic findings are disregarded.

5. Given a case of chronic eczema, the anaphylactic food tests offer hopes for our patient so far as the possibility of rapid improvement for cure is concerned, and also with regard to conferring immunity against future attacks by the employment of prophylactic measures. It will not be necessary to starve our eczema patient unnecessarily and without rhyme or reason.

6. Normal individuals do not react to the intradermic method of performing the anaphylactic food tests.

We wish to express our thanks to those who have aided in this work and, as always, I desire to express my gratitude to my chief, Dr. J. F. Schamberg, for allowing the use of the clinical material, which has made this work possible.

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TABLE 4

1	17	Acne vulgaris	3 years	Cow casein ±; egg ±
2	23	Acne vulgaris	4 months	Cow casein $+^1$; wheat ±
3	21	Acne vulgaris	Several months	Negative
4	30	Acne vulgaris with rosacea	4 years	Fish $+^1$; mutton ±; cow casein $+^3$; tomato ±
5	27	Acne vulgaris	Several months	Cow casein $+^1$
6	30	Acne vulgaris	9 years	Tomato $+^1$; pork ±; cow casein $+^2$; mutton ±
7	43	Acne rosacea	20 years	Shellfish $+^1$
8	15	Acne vulgaris	2 months	Cow casein ±
9	15	Acne vulgaris	....	Cow casein $+^1$; tomato ±
10	15	Acne vulgaris	....	Cow casein $+^1$
11	19	Acne vulgaris	2 years	Negative
12	19	Acne vulgaris	....	Negative
13	19	Acne rosacea	Several years	Cow casein $+^1$; clam $+^2$; pork ±; fish ±
14	18	Acne vulgaris	2 years	Negative
15	16	Acne vulgaris	2 years	Cow casein $+^1$; egg ±; wheat ±
16	14	Acne vulgaris	2 years	Negative
17	28	Acne vulgaris	....	Cod +; erring +; Chicken +; beef +
18	29	Acne vulgaris	....	Herring+; bread +
19	29	Acne vulgaris	....	Oysters +; eggs +

DISCUSSION

Dr. H. Brooker Mills, Philadelphia: I do not feel competent to discuss the paper, because of lack of personal experience and the great scarcity of literature on the subject so far as pediatrics is concerned. Scarcely any textbooks make reference to the subject. Holt, in a very few words, states that the idiosyncrasies in children to certain foods gradually seem to grow less and entirely disappear as the children become older. He mentions as the best examples of foods not tolerated eggs, oatmeal and buckwheat; of nuts, almonds and walnuts; of fruits, strawberries. He concludes the short article by stating the making of tests to date has been so difficult that but little has been done and therefore further evidence is necessary before conclusions can be drawn. This evidence Dr. Strickler has given us, and we are now in position to make use of the information in pediatrics. I should like to ask Dr. Strickler whether in any of his adult patients the condition had existed in early life. In other words, were there, in his experience, cases of very young children who suffered with this condition who, in later years, again suffered from it, but apparently from a different cause? Also, has it been shown that in a child in whom the condition had existed apparently the result of an idiosyncrasy toward eggs, the patient years later suffered again in the same way and from the same article of diet.

Dr. Anna M. Schrade, Erie: I should like to ask Dr. Strickler how the abstinence from these proteins brings up the latent tolerance.

Dr. Harry Lowenburg, Philadelphia: I should like to ask what Dr. Strickler's experience has been in regard to the withdrawal of fat and sugar in the treatment of eczema. My own experience causes me to regard eczema in the breast-fed as one of the rare reasons justifying the withdrawal of the breast milk if the milk analysis shows high fat and sugar content, as it frequently does. If the discontinuance of such a breast milk is followed by the use of a fat-free and sugar-free milk, such as is provided by saccharated (saccharin one grain to the quart) formulas derived from skim milk or from buttermilk, the results are often nothing short of dramatic.

Dr. Strickler, closing: In regard to Dr. Mills' question my answer is in the negative. Regarding the questions of the other two speakers I can say that my experience has been that in a certain percentage of cases after the cure of the condition the hypodermic injection of very minute quantities of the offending article of food has established a tolerance. I have records of something like ten cases in which this tolerance has been established. In regard to Dr. Lowenburg's question I can say that in children it is rather difficult to do the intradermic method. I have carried it out in several instances. In one child in whom I obtained strong reactions the offending articles of food were milk and eggs. This child, one year of age, had had eczema for four months. The child was put upon broth and in two weeks the eczema had entirely cleared up.

ACUTE SUPPURATION OF THE MIDDLE EAR *

J. CLARENCE KEELER, M.D.
PHILADELPHIA

Acute suppuration of the middle ear and its complications, resulting in great economic loss to society, to the country, and in many instances resulting in death, is frequent and to a great extent preventable. It occurs at all ages and in all stations in life. Its onset may result from a mere cold, from dentition, or from the more severe acute infectious diseases. Our clinics are crowded with those seeking relief from their deplorable affliction of running ears and resultant deafness. The writer has under his observation many cases so advanced that the functions of hearing and of equilibration have been irreparably damaged, or they have reached the stage of profound sepsis, and he is prompted to plead for a more thorough and systematic examination of the ears. This is especially necessary during acute infectious diseases.

That so little progress has been made toward the prevention of this great affliction during all the centuries of its existence is due, apparently, to the belief that a "running ear," so long as it "runs," is not harmful, or to the blind confidence that the patient will "outgrow" his condition.

In the more severe infectious and exhaustive fevers delirium ensues, until, by nature's process, the drum membrane ruptures and the pus drains from the tympanum; and not until this stage has the true nature of the case been recognized.

In this day a busy practitioner, called in a case of appendicitis, immediately seeks the advice of a surgeon, who does not delay operation until suppurative peritonitis results from a gangrenous appendix. Then, may I ask, why is not the same protection to life afforded the patient suffering with violent pain in the ear, which may, in truth, be called the "appendix of the head"?

Severe earache is a signal of middle-ear suppuration, and the chance of intracranial complications is equally as great as is the chance of peritonitis, depending upon the presence of pus in the abdominal cavity. Yet the pernicious habit of delaying incision until serious damage has resulted to the structure of the middle ear and its adjacent organs still prevails.

At birth, the middle ear is but a recess in the outer wall of the petrosa; later, the various portions of the temporal bone coalesce, the tympanum becomes fully developed, and the cavity is surrounded by bony walls, except that which is closed by the tympanic membrane.

This new middle ear is lined with mucous membrane similiar to that membrane lining the accessory sinuses, and it is in communication posteriorly with the mastoid cells and anteriorly with the pharynx through the eustachian tube. Because of this eustachian connection it is particularly subject to inflammatory changes from the nasopharynx. The mucous membrane in the hypotympanic recess is of the ciliated cylindrical variety and gradually passes into the ciliated squamous type in the epitympanum. The tympanum contains, also, many vascular mucous membrane folds. Therefore, by means of this framework, purulent inflammation of the epitympanum may extend to the mastoid antrum and cells. The pneumatic cells of the mastoid are lined with a delicate gland-

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* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 27, 1917.

less membrane, which is a continuation of the mucous membrane of the tympanic cavity.

The lumen of the eustachian tube, whose walls are covered by a granular mucous membrane with a ciliated cylindrical epithelium, is closed during the inflammatory stage; therefore it no longer serves as a source of drainage from the tympanum.

The tympanic membrane is lodged in the sulcus tympanicus, reinforced and supported in its position by the long process of the malleus, which is intimately united with the layers of the membrane. Its strong connective tissue coat is resistant, greater than can readily be conceived, to the escape of the inflammatory products from the tympanum.

In the time allotted it is impossible to write extensively on this highly important subject, but in the hope of impressing upon the clinician the gravity of the sequelæ of this apparently harmless disease I shall endeavor to present salient facts regarding the causes, symptoms and treatment of acute suppuration of the middle ear.

The bacterial invasion results in a purulent exudate from mucosa of the tympanic cavity, which exudate increases, following the line of least resistance, and reaches the aditus, thereupon flowing into the mastoid antrum. The intracellular walls then become necrosed by the undue pressure of pus in the cells from closing off of the blood supply.

Because of the intimate anastomosis between the vessels of the middle and internal ear an acute suppuration brings about a marked hyperemia of the internal ear, and serious infiltration or purulent inflammation with or without perforation of the labyrinth is caused more especially by infectious diseases.

The *Streptococcus pyogenes* is believed to be the most severe and destructive of both soft and bony tissue and the most frequent microorganism demonstrated in the purulent middle-ear disease. However, investigations of many otologists have shown the *Streptococcus mucosa capsulatus* to be a more destructive organism of infection. In the writer's experience the pneumococcus proved to be the most virulent in the epidemic of pneumonia of the past winter, as in several instances fatal otitic meningitis occurred after several hours of the initial onset, "earache."

The character of the invading organisms and their virulence are potent factors in the clinical determination. It is also the patient's resisting powers that influence the variance and terminations of the attacks. In one case resolution will follow incision of the drum membrane and drainage; in another, cure is possible only after the mastoid is opened. The information gained from bacterial examinations of the products of the middle-ear infections is of diagnostic value in the province of etiology, prognosis and treatment.

The chief predisposing factors are those produced by irritants in the upper respiratory tract which interfere with the physiological play of the cilia on the cells lining the walls of the eustachian tube and retard intratympanitic aeration, namely, obstructive nasal deformities, cystic and polypoid turbinates, adenoids and diseased tonsils, acute and chronic sinusitis, and carious teeth whose cavities contain millions of microorganisms. The middle ear is especially subject to purulent inflammation during the infectious diseases, scarlet fever, typhoid, diphtheria, pneumonia and influenza, while scarlatinal diphtheria is probably the most severe to the soft and bony tissue.

The symptoms are usually associated with high fever, and at times the onset is accompanied by chills and vomiting, a piercing, boring, throbbing pain, and a high-pitched tinnitus in the affected ear. In children these symptoms are frequently more intense and are ushered in with convulsions and marked meningeal irritation. In acute middle-ear suppuration associated with acute infectious disease, with an abrupt onset, the drum membrane is red, swollen, and often livid, and there is present a serous bulla having a pearly luster; or the membrane is covered with cracked epidermis infiltrated with serum. Drooping of the superior posterior membranous canal is pathognomonic of purulent inflammation and abscess formation of the mastoid cells.

Disturbance of hearing will be increased as the exudate forms in the tympanum, and remains until after perforation or the escape of the fluid. The bone conduction is as a rule preserved. In scarlatinal diphtheria and pneumonic infections it is due to a disorganization of the endings of the auditory nerve, caused by exudation or by the immigration of the microorganisms to an opening of the labyrinth capsule through carious erosion of the labyrinth windows (Moos).

The prognosis is favorable if the affection is caused by remediable changes, such as those affecting the upper respiratory tract, and unfavorable in cases of tuberculosis, syphilis, diabetes, scarlatinal diphtheria, chronic empyema of the nasal accessory sinuses. It is in these conditions that we find probable transitions of acute into chronic suppuration of the middle ear. Other unfavorable symptoms are frequent recurrent pains, secretions undiminished after several weeks' discharge, suppuration of the labyrinth in consequence of perforation of the labyrinth window, panotitis, which often destroys the function of the acoustic nerve, and, finally, death occurs from meningitis, brain abscess, sinus thrombosis, and general sepsis.

In the treatment of acute suppurative otitis media it is of supreme importance for the patient to rest in bed during the acute inflammatory stage and until the danger of complications has lessened. A brisk cathartic "calomel" should be given.

In the early stage of a mild form accompanied by moderate pain, douching the external auditory canal with hot saline solution 105 F. will afford relief. When the pain is severe and occurs in paroxysms, moderate doses of opiates may be given to aid in tiding the patient over the period of excruciating pain.

The instillation of oily preparations into the anditory canal for relief of pain should be condemned. They have no therapeutic value and form a media for the development of bacteria. Leeching, too, is to be condemned because it is unsanitary and presents grave danger of transmitting serious infection.

The drum membrane may be anesthetized by applying a solution of equal parts of menthol, cocain, and phenol. Saturate a pledget of cotton with this mixture and carefully place in apposition with the inflamed bulging drum. In ten minutes the tampon is removed, the membrane incised, the inflammatory exudate is drawn from the tympanum by means of a mild suction pump, the auditory canal is irrigated with one of the antiseptic solutions and a piece of plain sterilized gauze placed in the canal to facilitate drainage. General anesthesia can be used if preferred.

By this procedure pain is alleviated, and the danger of extension of the inflammation is removed. The subsequent healing takes place with no scar tissue. Spontaneous rupture should be avoided if possible, as the opening is small and jagged, with inefficient drainage, or the opening may be a large laceration, with borders more or less necrosed. Also the healing process is protracted and scars with considerable deposit of new connective tissue in the drum membrane, or often serious damage to the delicate mechanism of the middle and internal ear take place.

Myringotomy under strict asepsis is employed to evacuate the tympanum of its purulent content, to relieve pain, to limit the extent of infection, to shorten the course of the disease, and to prevent complications. When the phenomena which indicate a retention of pus in the tympanic cavity are observed a clean cut incision into the drum should be made as early as possible at the most prominent point and free drainage established.

Medical Arts Building.

DISCUSSION

Dr. William Hardin Sears, Huntingdon: It is to be regretted that Dr. Keeler's clean-cut, incisive paper cannot be brought before every member of the profession as well as this section, for, after all, the vast majority of cases of aural suppuration are seen first by the general practitioner or family physician. This is true not alone of those patients in whom suppurative otitis is present, but also of that large class of potential sufferers in whom the disease can be prevented. As a result the otologist is frequently called into consultation only after the condition has developed some graver complication.

The feeling, prevalent among some of the older men of the generation now passing, that an abscess of the ear ruptures the tympanic membrane spontaneously, and after that the purulent discharge eventually takes care of itself and the ear resumes its normal state, has resulted in the past in permitting patients to go without attention other than advice to use a hot poultice before, and to syringe the ear after, rupture of the membrane, while an opiate was given for relief of pain. Fortunately, the undergraduate teaching of recent years is making a radical change in such opinions.

This disease is the result of the transmission of an infective process to the middle ear. It is admitted as a clinical fact that, in a very large proportion of cases, this transmission is through the eustachian tube. Logically, then, any condition favoring the harboring and development of pathogenic organisms in the vicinity of the eustachian orifices must have a vital relation to the primary seat of infection.

In this connection nasal and nasopharyngeal diseases play a most important part. These cannot be mentioned in detail and special reference will be made only to nasopharyngeal obstruction due to adenoids. These are so frequently present in early childhood, when aural disease is prone to arise, that they constitute a menace to the integrity of the ears until their removal. When large, the growth acts mechanically in obstructing intratympanic aeration, both by interference with the action of the tubal muscles and by reduction of the epipharyngeal air space. In all types an abnormal mucoid secretion is present in considerable quantity. This forms an admirable culture medium for various organisms found there. Irritation and congestion of the tubes arise, in the presence of this obstruction and secretion, developing later into an active tubal catarrh. There are other conditions, nasal and pharyngeal, inducing the same end result. These have been enumerated by the essayist; but they cover a relatively small number of cases as compared with hypertrophied glandular tissue of the epipharynx. Add to this an increased virulence of the infecting organism or lowered resistance of the patient and the picture is complete.

In my personal experience, I have never met with an acute aural suppuration in a child, aside from those arising during the acute infectious diseases, where adenoid vegetations were not present. In the course of the acute infectious diseases mentioned, it is also a fact that the danger of middle-ear infection is much greater in the child with adenoids than in one without. Based on these facts, my belief is that nasopharyngeal obstruction in the form of adenoids is the most frequent as well as the most harmful predisposing factor in the development of middle-ear suppuration and that early diagnosis and removal of these growths will do more than any other single thing toward the prevention of this condition and its resulting complications.

The presence of adenoids should be recognized long before the development of the classical physiognomy with its open mouth, broadening base of the nasal arch, dull eyes and peculiar facial expression, for these signs are familiar to the layman of the average intelligence. Our neglect is found in that large number of children with adenoids, who apparently present none of the well-marked symptoms. Thorough examination of these children, however, shows that many of them are mouth breathers, are subject to frequent head colds or to attacks not yielding readily to treatment, and have impairment of hearing to some degree. When the nasopharynx is examined either by the mirror or the physician's index finger, or both, these vegetations are found.

As to the treatment of acute middle-ear suppuration, the author sounded the keynote in the first sentence of his paper, where he states the condition to be largely preventable. In other words, the best time to institute treatment is before the onset of the disease. This may be done by removing those factors tending to its development. Since a normal nose and a normal nasopharynx are absolutely essential to the maintenance of normal ears, the first step is the removal of any and all obstruction to normal nasal respiration and to the perfect ventilation and drainage of these parts, including of course the sinuses. When this has been accomplished, the opportunities for an acute aural infection have been in a large measure removed. In this connection it is hardly necessary to refer to the obvious need of correction of systemic dyscrasia, metabolic disturbance or hygienic conditions which tend to lowered bodily vitality and resistance.

That this section should maintain an active propaganda toward instructing the public on the great possibilities in the preventive treatment of aural disease is without question.

Dr. B. Alexander Randall, Philadelphia: The paper is excellent, and the discussion of Dr. Sears has emphasized and added to it so distinctly that there is not a great deal to be added. There are, however, one or two points on which I have laid emphasis, which I think deserve consideration. One is in relation to the prevention of these troubles, especially in cases of the exanthemata. Almost invariably acute attacks of the middle ear occur at night. The child has escaped much pain and trouble until nightfall. He has been cross, feverish and anoretic, but had no sleep. With the ear snugged down on the pillow, warm and comfortable, he sleeps, but after a while he turns over and exposes it to the air of the room, with a temperature 20, 30, 40 degrees perhaps, lower than the inflamed and probably somewhat moist ear-region. A stab of pain wakes the child with a shriek and we have the trouble, some earache to deal with, often passing and trivial, often of the serious nature outlined in the paper.

Now, the mere protection of the ear against such changes is so ridiculously easy that it is neglected; but as Pepper the elder said to me twenty-five years ago, he hoped somebody would kick him if ever he treated another case of measles or such disease and neglected to put on a nightcap. So I have always practiced and insisted on the importance of covering the ears against these changes. Many an ear in cases of scarlet fever, measles, etc., would escape the setback by suden chill if that simple device were used. This should generally be a small mull cap with reinforcing over the ears, so as not to overheat the rest of the head. It is remarkable how much can be accomplished by this utterly simple thing.

One other point that has not been brought out here is the extreme value of atropin. All of my acute nasal cases I treat in this way, and not a few of the hypertrophic, and a few chronic affections, some even of the suppurative ones; all of the acute sinus involvements, with which of course the ear is rather to be correlated, because in some sense the tympana are accessory cavities of the nose.

On the other hand, the point that has been made that the nose and the nasal pharynx are vestibules to the ear from its eustachian side, must of course be kept most rigidly in mind, and these parts kept in good order. The point which I have laid more stress on, I think, than some other men, is that a free nose is the way to avoid the adenoids; that a great many of the cases that are operated on as adenoid hypertrophy are cases of mere adenoid congestion and swelling, which would yield under the opening of the nose and relieving the nasal stuffiness which is present. Where that has failed and there is hypertrophy, it can be removed only by other means. But a free nose will save one from much of this thing, and a stuffy nose will grow a new adenoid every year for operative removal if you choose to allow it to do so.

One word as to the further complications: I feel that the pneumococcus is very much the most frequent one of the infective organisms, and the one which I probably most dread. We know that the streptococcus and mucosa, and various other things have their list of bad cases, but the other is much more frequent, and I think from it comes our most harmful results, especially in children, the meningitic involvements.

In the acute cases (and the paper is on that subject) sinus thrombosis, brain abscess and so forth, very rarely occur. Those are generally results of the chronic form. In acute otitis the jugular bulb is more often thrombotic, but these cases are often self-limited and undergo spontaneous cure.

Dr. Keeler, closing: As these cases are seen first, usually, by the family physician, and not by the specialist, I shall endeavor to emphasize the more important signs and symptoms of middle-ear infection so that, by an early recognition and treatment of the disease, it may be aborted. Thus will the frequency of chronic suppuration and its consequent impairment of hearing be materially lessened.

The layman has long believed that cutting the ear drum would cause a complete loss of hearing. That is not the case, however. It is by cutting that the sense of hearing is preserved, because the pus is evacuated before too great damage has been done.

I fully agree with Dr. Randall regarding the great comfort and benefit warmth affords the sufferer. Well do I recollect the terrific earaches of my early boyhood days, and the relief finally obtained by hot applications.

To facilitate operation, we are greatly indebted to the teaching in the use of a general or of a local anesthesia. We believe gas anesthesia to be the ideal method. In that state the drum membrane can be freely incised and the pus drawn from the middle ear by gentle suction. But it is, sometimes, more expedient to produce a local anesthesia and we find most effective one composed of phenol, menthol and cocain in equal parts. A small piece of cotton, saturated with this mixture, should be applied to the drum membrane. Another small ball of cotton should be placed in the auditory canal to keep the first piece close to the bulging drum membrane. In ten or twelve minutes, the cotton may be removed; the drum will appear escharotic and the incision can be made without pain.

The presence of adenoids predisposes to attacks of earache. Recurrence of adenoids after having been removed has been most frequent to those who have suffered from one or more of the acute infectious diseases whose poison has lowered the vitality and the consequent power of resistance.

It is, therefore, imperative, if we would preserve both the function of hearing and the life of the patient, that we make frequent examinations of the ears during acute infectious diseases; that we early recognize an acute suppurative inflammation of the middle ear, and that we promptly incise the drum membrane and secure free drainage.

LARYNGEAL TUBERCULOSIS *

CHARLES S. REBUCK, M.D.
HARRISBURG

In the writer's opinion this most distressing of all the complications accompanying pulmonary tuberculosis has not received the study along diagnostic and therapeutic lines which it deserves. In practically all the textbooks the chapters devoted to this disease are written along very similiar lines and many of their diagnostic findings cannot be verified.

The statistics given, with management of cases and results, here recorded are the findings of five years' experience as consulting laryngologist at the Pennsylvania State Tuberculosis Sanatorium at Mont Alto. It is the largest institution in the world, I believe, devoted exclusively to the care of the tubercular, and is located in the South Mountain almost midway between Pittsburgh and Philadelphia, along the southern border of the state. It has an altitude of 1,600 feet, with about the average days of sunshine and rain that prevail in southern Pennsylvania. The number of patients constantly under treatment for the past five years is over eleven hundred.

These cases are all referred from the various state dispensaries, one or more of which are located in each county in the state, where the original diagnosis and classification of the lung condition has been made. A further examination is made by Dr. Johnson, or one of his staff of trained assistants, soon after admission to the institution and at regular intervals thereafter. Within one week after admission the laryngologist examines the throats of all new patients, making a diagnosis and classifying them. A reexamination is made every month as long as the patient remains at the sanatorium.

Not a great deal of value is attached to subjective throat symptoms, diagnosis being based almost exclusively on the appearance of the larynx. If a diagnosis of tubercular laryngitis is made it is classified as incipient, moderately advanced or far advanced. An early stage is recognized by a beginning infiltration in the posterior commissure of the larynx and arytenoids and about the base of the epiglottis. Instead of a clear cut appearance of these parts, as is found in the normal, they are roughened, thickened, and congested, due to the beginning infiltration. There may be also a very slight redness of the cords.

The anemia and pallor frequently spoken of as the initial symptoms of tubercular laryngitis, we find to be very rare.

If this infiltration has increased over the epiglottis and commissure with an edema of the arytenoids and false cords and a marked congestion and thickening of the true cords, a diagnosis of moderately advanced tubercular laryngitis is made. As the infiltration and edema increase, the tissues begin to break down with first a superficial and later a deep ulceration, usually first involving the epiglottis and cords and frequently the entire larynx, in an edematous ulcerated mass, it being impossible to recognize any landmarks in the last stages.

The subjective symptoms accompanying these three stages are, first, a slight hoarseness and coughing, which the patient refers to the upper trachea, a sensation of fullness in the

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* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 26, 1917.

throat, later increased hoarseness until voice is entirely gone, increasing pain, and finally inability to swallow food at all.

Chronic simple laryngitis is differentiated by the fact that the hoarseness has existed for many years, with neither improvement or increase in its degree, with absence of pain, and as a rule the only parts involved are the true cords, which are deeply inflamed with slight infiltration; syphilitic laryngitis by the character of the ulceration, a Wassermann reaction and the therapeutic test. It is a fairly frequent complication of tubercular laryngitis and sometimes almost impossible to diagnosis until one or more of the above checks have been made use of.

In the moderately advanced and far advanced cases many develop granulations, tuberculomata and miliary tubercles.

Many writers offer little, if any, encouragement in the treatment of this disease, and when not recognized until far advanced, treatment will avail nothing. But, diagnosed early, and with proper management, there is no doubt that many may be cured. If defective nasal breathing is present, its correction is attempted by the operation indicated. Diseased tonsils are removed. If a chronic pharyngitis exists it is regularly treated.

As a rule, an alkaline nasal wash is ordered, preference being equal parts of sodium bicarbonate, sodium biborate and sodium chlorate, one teaspoonful to a glass of warm water, followed by a very bland oil spray. We find that the cleaner and healthier the nose and nasopharynx are kept, the better will be the progress of the laryngeal condition.

We have used probably every kind of intralaryngeal application, powder and spray, but for routine use we find a 5 per cent. solution of formalin in glycerin gives the best results. After applying this formalin solution, in all far advanced cases, free application of an orthoform emulsion is made, consisting of

Menthol, grains xl.
Oil of sweet almonds, drams vi.
Yolk of egg, drams iv.
Orthoform, drams ii.
Aqua distil., q.s. ounces ii.

A very decided relief from pain is experienced for from four to twelve hours by its use.

Many of the incipient cases do well by the application of a 25 per cent. solution of argyrol, or a 5 to 10 per cent. solution of nitrate of silver, or a 2 per cent. solution of argyrol used with atomizer by the patient himself.

Probably 75 per cent. of our cases are treated three times a week by the intralaryngeal application of the 5 per cent. formalin.

When a case has advanced to the stage of deep ulceration with severe pain and difficulty in swallowing, orthoform lozenges dissolved in the mouth several times daily give some relief, also lozenges containing from 1/10 to 1/4 grain of cocain may be used.

The following formula which we have used since orthoform has become so difficult to procure, seems to be very effective in the relief of pain:

Dionin, grain 1/10.
Hyoscin, grain 1/600.
Menthol, grain 1/5.
Red gum to make a lozenge.

Also, in all patients suffering great pain, the alcohol injection of the internal laryngeal nerve is done once or twice a week. We have found a mixture of 1 per cent. cocain, 25 per cent. water, and 75 per cent. alcohol gives the best results. The technic is simple and when properly done gives instant relief, which lasts from two to five or more days.

Before presenting some of the statistics of the laryngeal work done at Mont Alto, I would like to urge that we be more careful and more thorough in our examinations when a patient complains of persistent hoarseness or of other apparently trival throat symptoms; and, of greater importance, that we by every means possible insist that the general physician be so trained and made to realize the importance of making an early diagnosis of tuberculosis.

The following figures give the total admissions, discharges and deaths for 1912, 1913, 1914 and 1915 and give a general idea of the number and class of cases observed:

	Admissions, 8,511	Discharges, 7,423	Deaths, 850
Incipient	1,172	1,105	5
Moderately advanced.	3,531	3,295	61
Far advanced	3,808	3,023	784

This, the condition of discharged cases for 1912, 1913 and 1914:

	Incipient, 853	Moderately Advanced, 2,470	Far Advanced, 2,324
Improved	395	1,041	812
Arrested	311	795	254
Apparently cured	199	132	12
Progressive	48	502	1,246

A slightly different classification was used in the 1915 discharges:

	Incipient, 252	Moderately Advanced, 825	Far Advanced, 699
Apparently cured	50	26	...
Arrested	48	20	...
Apparently arrested ..	97	373	178
Improved	52	303	281
Unimproved	5	103	240

Laryngeal report for 1913, 1914, 1915 and 1916:

	Incipient, 1,842	Moderately Advanced, 1,030	Far Advanced, 282
Apparently cured	241	47	...
Arrested	404	125	...
Improved	728	468	69
Stationary	186	170	37
Progressive	266	209	168

412 North Third Street.

DISCUSSION.

Dr. Samuel P. Glover, Altoona: The paper of Dr. Rebuck deals with the condition of laryngeal tuberculosis as encountered at the Mont Alto Sanatorium. At Cresson we encounter much the same conditions, though with a smaller number of patients. In our work there, we examine all the new patients, and, those not having any head or laryngeal symptoms are passed by, and only gone over again after they have spent some time at the sanatorium to see if any new lesions have developed. In the clinic, we classify our laryngeal patients into the incipient, second stage and advanced cases of tuberculosis. In the incipient stage we make our own classification; that is, noting all degrees of color as found in the larynx, from the palest pink, whether as a streak or local spot, or of the whole cord or the tissues of the larynx, or through all shades of pink to red and the various shades of red. We may have only a small pink area different from the surrounding tissues. This may be at the anterior commissure, at the nodules or the posterior commissure, about the false cords, or over the arytenoid area or borders of the epiglottis. These conditions are often present only temporarily; that is, influenced by cough, certain changes of weather (as a cold, sharp morning), or too much conversation. Many of these vary from day to day. It is difficult to make a positive diagnosis of laryngeal tuberculosis in the incipient stage without a history. Many classify the incipient stage with the formation of nodules, ulcers or infiltrations. These, we classify as second stage tuberculosis. The primary is often laryngitis that cannot be distinguished as simple or tuberculous. The fact is, the stage of simple laryngitis is present first, and can only be considered as truly tuberculous when erosions are present, but the simple laryngitis in a tuberculous person must be classed as a tuberculous laryngitis in its first stage. Many of these cases never advance beyond this stage, because the general health or condition improves, and the throat condition clears up with it.

In the cases where there is a pink condition about the anterior fissure, or a red ring around the nodule, there is generally seen a watery condition of the nose, with the patient continually wiping or blowing the nose, and small reddened or abraded surfaces about the opening of the nostrils, much resembling acute rhinitis without the swollen condition of the nostrils. These cases, we regard with suspicion, as very frequently they develop a rapid form of laryngeal or general tuberculosis. The watery secretion possibly erodes the mucous membrane. The patients are generally anemic, and most often young people. On microscopic examination, usually, in these cases only the catarrhal bacillus is found in the nasal secretions. Agreeing with Dr. Rebuck the condition, as given in the textbooks, of anemia as a symptom of laryngitis does not seem correct, as where this anemia is found it is generally with systemic anemia. More cases are noted with all stages of congestion in the larynx than with the anemic condition. Another symptom, as noted in textbooks as an early diagnostic sign, is a streak of pus found in the fissure in the posterior commissure. This appears to be only an indication of pus coming up from the lung, though with laryngeal symptoms it means tuberculosis; that is, indicating general tuberculosis and not laryngeal. If the second stage is present, there is no need of this pus streak to help make your diagnosis, as with the tubercles, abrasions, ulcerations, infiltrations on any part of the larynx or epiglottis all lend themselves to a fairly easy diagnosis.

Hoarseness is given as a symptom of more or less varying constancy. Now and then there is a case of persistent hoarseness where nothing can be seen in the larynx in any way abnormal. The source of this, of course, is hidden from view. Now and then a granular condition is found at the interarytenoid area, persisting for months and years. Hoarseness is nearly always present. This always arouses suspicions of tuberculous trouble, but, with no breaking down of the tissue, these cases may persist for years and no sign of pulmonary tuberculosis be found. Many times we find a great amount of infiltration over the arytenoids and folds without any abrasion being discovered. Sometimes, when these subside, a cicatricial spot is seen below where this infiltration was, evidently hidden from view at the time of the actual process. The thickening in the interarytenoid space nearly always has hoarseness as a feature owing to improper apposition of the cords. Pain is not so much a symptom of laryngeal tuberculosis till there is extension to the oropharynx and the muscles of deglutition are involved. It is wonderful what changes take place in the larynx in apparently hopeless third-stage cases, arrested in their progress. Half the epiglottis is gone, the other tissues are twisted out of shape so that the cords or what is left of them can scarcely be seen, and yet a fair voice is present.

In the treatment of these cases our methods do not vary greatly from those of Dr. Rebuck. Five per cent. formalin solution is used where there are infiltrations, abrasions or second or third stage conditions. The patients claim more comfort is felt after its use than with the silver salts. In the first stage with the congestion and attendant hoarseness, aside from the alkaline sprays, we content ourselves with using a camphor-menthol solution as a spray, reasoning that, now and then, with a local application a traumatism is or may be produced. No severe application, like fused silver, is used, and that should be used only where there is great skill possessed by the applicator. The actual cautery comes in pretty much the same class. We have not used the alcohol and local injections. Many cases show a remarkable neglect of the teeth, with caries, roots, snags and deciduous teeth ready to be picked out, pyorrhea in all its stages. These should receive as much attention as the tonsils, adenoids and obstructions in the nose and accessory sinuses.

In my judgment, a dentist is as much needed as a laryngologist at a tuberculosis sanatorium.

Dr. George W. Stimson, Pittsburgh: Dr. Rebuck and Dr. Glover have undoubtedly had a great opportunity to study tuberculosis of the larynx. We can find a great deal of literature about tuberculosis of the larynx, but we can find very little about tuberculosis of the pharynx. There has come to my attention recently in a patient a condition about which I have been unable to find anything in literature. The patient is a man 31 years old, who came into my office three months ago from one of the outlying districts, suspected of having tuberculosis. An examination showed very marked last stages of tuberculosis of the larynx with ulceration. But what was most interesting was that as soon as one depressed the tongue one could see in the left side of the fauces, involving the anterior pillar, the posterior pillar and the velum to a little bit beyond the base of the uvula, what looked at first like an ulceration, and I assumed it to be a tuberculous lesion. It seemed to be sort of a coagulative necrosis. There was not absolute destruction of the superficial mucous membrane; it was shiny and glossy, but, beneath, it looked milky or white, coagulation necrosis. The left tonsil had been entirely destroyed. That apparently had ulcerated out; the mucous membrane on the pillars and the velum had not been destroyed, but underlying it was this condition which I have tried to describe. It was most remarkable, and as soon as you depressed the tongue you could not fail to see it. Still, though the patient had been ill many weeks, a diagnosis of tuberculosis, either pulmonary or laryngeal, had never been made.

I sent the man over to Dr. E. W. Willetts to have smears made, and he found tubercle bacilli. The patient died in five weeks. Dr. Willetts agreed with me that the lesion was most unusual, something he had never seen before, and also agreed that it had no appearance of being syphilitic. I would like to ask the gentlemen from Mont Alto if they have run across cases of this kind.

Dr. G. R. S. Corson, Pottsville: I want to raise the question of the primary tuberculosis of the larynx. I understand that these gentlemen reading the paper and opening the discussion get the cases at the sanatoriums after the lung has become involved, and you would hardly expect them to see cases of prior tuberculosis of the larynx.

A few years ago I read a paper before this section on this same subject, and in looking up the literature I found many eminent men in the specialty, laryngologists, who claimed that there was no such thing as primary tuberculosis of the larynx, and I found other as eminent men who claimed that they had seen it. Now to me that is an important question, whether or not some of these cases of tuberculosis of the lungs might have been prevented if some little hoarseness had been looked into and the discovery made of a primary or tubercular lesion of the larynx. I do not have sufficient experience to give you any authoritative statement on the subject, but I simply raise the question.

One other point in regard to treatment. I consider the matter of rest, absolute rest, of the vocal organs as an important factor in the treatment of the disease; that the patient should be prohibited from even whispering.

Dr. Edgar J. Stein, Lancaster: I want to ask Dr. Rebuck whether he has ever had the unfortunate experience of operating on a tubercular patient for removing tonsils and seeing the tonsils gradually regenerate themselves, either by growth of new tissue or hyperplasia?

I would also like to know whether they have done any work along the lines of complement fixation. I have taken up that subject trying to diagnose early tuberculosis, and I find the biggest difficulty we have is to get serum which we can depend on. In other words the commercial houses will not guarantee it. The men who make that serum know nothing about it. Some of them have been kind enough to send us what they had, with the understanding that we will report on its efficiency. I do not know of any article that is definite in its results. I have seen very little literature along the line of complement fixation in tuberculosis, and I think if we can work out this point, it would be of decided value. Such institutions as Mont Alto would be very proper places for working on the fixation tests; it would help us to diagnose very early cases of tuberculosis.

Chairman Kistler: We all know that the sanatorium treatment has to do a great deal with very advanced cases which we in general office practice do not see. Some very good points were touched on by the doctor, and I hope Dr. Vansant, who has had a large experience in the Polyclinic Hospital in Philadelphia, will touch on the very early cases which we see, and which concern the large number of men in the average practice of rhinology and laryngology. If there is any discussion that can be directed along that line I would be very glad to have it come out.

Dr. Eugene L. Vansant, Philadelphia: We are certainly very much indebted to Dr. Rebuck for his interesting paper. He speaks from a colossal experience, and much that I could say would be simply to corroborate what he has already said.

I would like to dwell on one point. I have been amazed at times at the remarkable improvement that has taken place in the laryngeal condition following proper removal of obstructive nasal conditions, and of diseased tonsils. It is a point that we are very apt to overlook. We are inclined to attack the larynx direct instead of restoring the nasal breathing and removing diseased tonsils.

I have had some very favorable results from the use of lactic acid applied to the ulcerations in the larynx. I have seen ulcerations heal and the patient greatly improved.

Dr. Rebuck has given us some most admirable suggestions for the care of extreme cases, to alleviate their suffering, to promote deglutition, and his paper ought to be read by all of us very carefully. In very extreme and advanced cases, cases of difficult deglutition, I have found that, by having the patient lie on a sofa on his stomach sucking fluids through a glass tube, frequently he can swallow when he cannot swallow in the sitting or lying position. The hoarseness is of first importance. I would like to speak of the occasional loss of voice. It has been a point that has always been very suspicious to me, if a patient comes with a history of attacks of not so much hoarseness as loss of voice, hardly being able to speak above a whisper, weakness of voice.

Dr. Glover: We lay a great deal of stress on obstructions of the nose, tonsils, adenoids, etc., but I think a great deal more attention should be given to the teeth. You would be amazed at the condition of some of our patients' teeth, and I think these bad teeth keep up the tonsil and adenoid conditions.

Dr. L. Leo Doane, Butler: I wish to ask a question more than to discuss the subject: (1) If the lungs are involved and the tonsils have local tubercular infection, whether it is best to remove the tonsils; (2) if these conditions obtain and the tuberculous inflammation has extended beyond the tonsils into the fauces and the pillars, whether then it is best to remove the tonsils. I have had a case recently about which I was undecided. In this case the lungs were decidedly affected; the general health was considerably below par; the tonsils were very much involved, ulcerated. My consultant agreed with me that it was best not to remove the tonsils.

Dr. E. O. Kane, Kane: This subject of surgical interference and surgical treatment of tubercular troubles of the throat involves much the same questions as those which are to be answered relative to tubercular conditions elsewhere. It is a most important topic.

Many years ago, you recollect, abdominal surgeons discovered that patients suffering from tubercular peritonitis had the tubercular process arrested or cured by opening the abdomen, with lavage and exposure of its contents to the air. Just what this stirring up and exposure brought about in attaining a cure is not known. Yet the results obtained have continued to be gratifying. Tubercular disease of the joints, the knee in particular, seems to be arrested or cured in somewhat the same manner. It may not be impossible that operative work of any sort done on a tubercular ulcerative condition of the larynx accomplishes its beneficial results through the same occult channels. The peculiar stirring-up process, so to speak, so beneficial in tubercular peritonitis and tubercular joints, may in fact be precisely the same process which proves beneficial in a tubercular throat.

Dr. George B. Wood, Philadelphia: I was very sorry not to get in to hear this paper. I have had considerable experience with laryngeal tuberculosis at the Phipps Institute Dispensary in Philadelphia, and have done considerable experimentation. I feel that the actual cautery in laryngeal tuberculosis is the method par excellence of treating that disease; that if we can get at the lesion with a cautery knife we can cure it 90 times out of 100. Of course, if the disease is located in the larynx where we cannot get at it; if the patient is so uncontrollable that he cannot let us manipulate in the larynx, we cannot accomplish a cautery; but given a tubercular lesion on the posterior wall and a patient with vitality to have them cast off and live, we can cure it every time. I have seen tuberculous lesions on the posterior pharynx wall simply seared with the cautery and in two weeks the scar of the lesion could not be seen.

Now, why is that? There is a very good pathological reason. Take a series of tubercular lesions in guinea-pigs' abdomens, sear them with a cautery, and then examine them periodically after that, you will find that within twenty-four hours new blood vessels will be starting up from the tissues underneath the tubercles and penetrating where there were no blood vessels before, in order to make the inflammatory reaction necessary to cast off that slough. Later these blood vessels actually form a net around that scar, that whole tubercle will become infiltrated with new blood vessels, and finally the part of the tubercle that has not been destroyed by the eschar becomes fibrotic. Every time in those guinea-pigs I have found that lesion held up; not that it was removed by the cautery, but simply that the cautery knife was drawn through it sufficient to set up this inflammatory reaction. That happens in the larynx. Of course there are cases which progress because we cannot get at the local lesion.

Just a word in regard to the bloody surgical treatment. My feeling is to avoid it, for there is not, as I have seen, any instrument which can easily, except perhaps by the suspension apparatus, be introduced into the larynx and the tissue removed without squeezing that tissue. For instance, in removing an epiglottis for tuberculosis, if you punch that off, as is done in the majority of cases, the action of the operation squeezes the diseased area and that forces the tubercle bacilli into the surrounding lymphatic network, and very often you will find that the disease will spread locally from the wound.

Chairman Kistler: The tendency in the discussion, it seems to me has been to consider rather lightly the removal of the tonsils in tubercular cases. From experience I warn you to think twice before attempting tonsillectomy. If we get a good result we often do a great deal of good; but if a hemorrhage results we will probably feel afterward that we should have let the tonsils alone. It lowers the patient's vitality very much. I have seen it once in my own experience and a number of times in my colleagues' where, after what I considered a good operation, there was a hemorrhage, the patient deteriorated very rapidly and never recovered from the shock. It is always a question in my mind whether the tonsillectomy will be of sufficient worth to take the chance. Where there are markedly diseased tonsils, of course we have got to take the chance, but we should not attempt it until after the most serious consideration of the merits of each individual case.

Dr. Alexander Hampsey, Pittsburgh: I was up at Kutoka Sanatorium two years ago, and Mr. Petrof for two years had been working on and had a great deal of confidence in this complement fixation. It is very much like the Wassermann reaction, and on every case that comes into the sanatorium the blood is taken and this complement fixation test is made.

Dr. Rebuck, closing: I have had occasionally both primary and secondary hemorrhage after tonsillectomy. Fortunately, we have had no severe ones in our Mont Alto patients. I agree absolutely with Dr. Wood in condemning surgery in the active tubercular larynx. We have used the cautery but a few times and with good results. I do not see how cauterization would be helpful in pharyngeal tuberculosis, which is always secondary to the laryngeal condition, the patient having but a few weeks to live after this complication arises. We have had fifteen to twenty cases of pharyngeal tuberculosis and it is one of the worst complications that can accompany pulmonary tuberculosis. We of course never operate on an actively diseased tubercular tonsil. In incipient or moderately advanced cases, if the tonsils are diseased or hypertrophied, or in tonsillar abscess cases, the tonsils are removed in an adult by local anesthesia, procain (novocain) 1 per cent., and in children ether anesthesia. Contrary to the general teaching we have had no bad results following the administration of ether.

Dr. Vansant speaks of the use of lactic acid, which we find quite effective in 50 per cent. solutions, directly applied to the ulcerated surfaces.

We frequently encounter a temporary loss of voice that I cannot explain. The voice will be fairly good. when suddenly the complete aphonia will occur, lasting for a few days, when the voice will return perfectly normal. Dr. Glover also spoke of cases of pronounced loss of voice without any objective symptoms. I have occasionally observed these cases where no pathologic symptoms could be observed in the pharynx or larynx to account for hoarseness.

Some wonderful results have been reported in the direct sunlight therapy that is now being used in New Mexico and Arizona in many of the sanatoria. However, this requires the cooperation of an intelligent patient, as by a system of mirrors, operated by themselves, light is projected directly into the larynx. I hope we may try out this line of treatment, as it seems to me to be the most rational form of treatment yet instituted.

Rest of the voice that some one has spoken of is extremely important, but, as a rule, impractical. The average patient will not stop talking, but if he would cooperate in this regard it would be of more service in bringing about a cure in active tubercular laryngitis than any or all lines of treatment combined.

HERPES ZOSTER OPHTHALMICUS*

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This unusual and rare affection is an acute specific disease of the nervous system, characterized by the formation of vesicles or blebs on inflamed bases over that portion of the head and face supplied by the ophthalmic branch of the trigeminus. The branches of the ophthalmic nerve usually involved are the supra-orbital, supratrochlear, occasionally the lacrimal, and less frequently the nasal nerve. The inflammation, which arises without any distinct central or peripheral cause, is located in the gasserian ganglion or trunk of the nerve, or both. The disease was not considered a distinct one by ophthalmic surgeons prior to the latter half of the nineteenth century. It has been known to occur in epidemic outbreaks, yet there are many physicians and ophthalmic surgeons who have never seen a case.

Etiology.—We are still in doubt as to the cause of the neuritis of these nerves, whether it is of peripheral or central origin, and as to the nature or origin of the nerve poison which produces these manifestations. Clinical facts show that various kinds of nerve poisons may cause similar nerve inflammation without causing an eruption of zoster. We find herpes zoster bears some relation to diseases of the general nervous system, for it has been seen during the course of general paralysis of the insane, and frequently it accompanies some of the acute infectious diseases, notably pneumonia. Stieren was able in his cases to trace a history of exposure to cold or dampness in those who had been exhausted by unusual exertion and fatigue. The second and third of my series of cases gave a history of exposure to cold, followed by neuralgic pains in head, with a subsequent eruption of vesicles. Ophthalmic zoster is also most common in feeble, elderly persons with poor nutrition. Probably chronic nasal accessory sinus disease may be a contributory cause of some cases of this affection.

The vesicles form in that region of the scalp and face supplied by the first or ophthalmic branch of the trigeminal nerve, or the eruption may be confined only to the region supplied by certain branches of the ophthalmic nerve. It is rare to find the eruption over the region supplied by the second and third branches of the trigeminus, for instance, over the lower lid or that portion supplied by the second or infra-orbital branch. The attack may be preceded by such prodromal symptoms as chilliness, increased temperature or a sense of impending illness. There is usually violent darting neuralgic pains over the supra-orbital region, or hemicrania, and severe pain in the scalp. When there is great soreness of the scalp and an extensive eruption of vesicles, the hair may fall out. The surface of these hyperalgesic areas usually becomes reddened and edematous before the blebs form. If the case is seen early it is possible to map out the painful area that will be subsequently occupied by the eruption. Some cases may develop for two or three days a slight conjunctivitis. These symptoms may continue with varying intensity for about ten days, yet some cases may be so mild that the symptoms disappear within a few days. If the prodromal symptoms are severe, the eruption occurs on the third or fourth day; my second case developed an eruption the first day of his neuralgic pains. The patient may become quite ill with fever and faintness, sometimes there may be nausea and vomiting which persist until the eruption has fully developed. After the efflorescence is complete, the pain subsides and the general symptoms lessen. The temperature of the affected region is increased, the sensibility decreased. If the eye becomes involved this will occur about the time of the appearance of the vesicles. There is in some cases great photophobia, irritability and increased lacrimation with congestion of the bulbar conjunctiva. If vesicles form on the cornea they may tend to ulceration and kerato-iritis. There may also be swelling and formation of vesicles on the conjunctiva. The eyelids during the acute stage are nearly always congested and edematous; occasionally ptosis may occur if there is involvement of the third nerve.

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* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, Sept. 25, 1917.

There may be tenderness over the lacrimal gland with some enlargement. Great edema of the lids and chemosis of the conjunctiva occur when the supra-orbital nerve is severely affected; this is often preceded by an irritability of the conjunctiva for three or four days before the eruption of the vesicles. When the nasal branch of the nerve is involved vesicles usually form on the surface of the cornea, preceded often by an irritability of the eye. Anesthesia of the cornea may be localized in only parts of the cornea and may continue for some time after the disappearance of the vesicles. The involvement of the cornea is the most serious of all the manifestations of ophthalmic herpes. The vesicles being arranged in groups rapidly rupture, thus exposing minute ulcerations, which enlarge and fuse with one another; hence, in a short time a considerable area of the cornea may become denuded of its epithelium and often be followed by deep infiltration of the cornea. Iritis is a complication that often occurs and may be overlooked, especially when there is marked blepharospasm and edema of the lids. Dilatation of the pupil with the iris immobile, due to paresis of the iris, has been frequently noted; two of my cases had this symptom. Hutchison believed that in all cases in which the eye was affected, paresis of the iris occurred, so that immobility of the pupil ensued. Such cases are seen where the trochlear nerve has been affected through irritation of the ophthalmic ganglion from the ophthalmic nerve. This paresis of the pupil may simulate iritis, particularly if there is hyperemia of the bulbar conjunctiva. Glaucoma is said to be another complication that may develop during or following an attack of ophthalmic herpes, especially if there is any tendency to a rise of tension.

Ophthalmic herpes tends to spontaneous recovery in two or three weeks. As the disease is usually most common in elderly, feeble persons, although younger persons may have it, the treatment consists in use of tonics such as iron, quinin, arsenic, etc.; locally, anodyne lotions, such as lead water and laudanum, or opium and ichthyol ointment, with frequent applications of powdered zinc oxid, or stearate of zinc are useful to stimulate healing of the blebs. Severe pain must be relieved by opiates, or morphin hypodermically, the postneuralgic pains are frequently relieved by the application of the positive pole of a mild galvanic current. If conjunctivitis, kerato-iritis, or cyclitis develops, treatment is indicated by the methods recommended for those diseases. Examination of the nasal accessory sinuses is important, and such treatment should be carried out as will give free drainage to these cavities.

My first case of herpes zoster ophthalmicus was treated fifteen years ago in the person of an elderly lady, aged 65, of a highly neurotic temperament, who had been worrying about financial troubles. After an attack of influenza associated with nasal and accessory sinus inflammation, she was seized with violent neuralgic pains over the supra-orbital region. Three days later a discrete vesicular eruption appeared over left forehead with a few scattered blebs on the left upper eyelid. A few vesicles formed on the cornea, these latter coalesced and formed an ulcer, the cornea became anesthetic and continued to be insensible for several weeks. The iris was paralyzed, pupil semidilated and immobile; there was also conjunctivitis. The eye manifestations disappeared, the corneal ulcer healed, leaving an infiltration of the cornea and impaired vision. Recently I refracted this patient's eye. She is now 80 years of age and in fair health, although there still is visible a corneal nebula, the result of the attack of ophthalmic herpes fifteen years ago.

Case 2.—J. Z., aged 59, was a stock broker. I saw the patient, in consultation with Dr. G. E. Holtzapple, on Jan. 26, 1917. Patient gave the history of having been enfeebled for some time on account of strenuous work during the winter. While walking to his place of business one very cold, windy morning (ten days previously), he was seized by very severe neuralgic pain over left side of face and head, with a stinging pain in the left eye and increased lacrimation. By noon of the same day the pain was intense and an eruption appeared over the left half of scalp, forehead, eyelid and left side of nose to tip. When I first saw him ten days after the eruption appeared, the left half of scalp, forehead, upper eyelid, and side of nose to tip was one mass of vesicles in the second stage of healing. There was marked edema of the left upper eyelid with chemosis of the conjunctiva; there was a haze over the lower half of the cornea, pupil semidilated and immobile. Subsequent examination under a magnifying loupe revealed minute ulcerations of the cornea with denudation of the epithelium; the inferior half of the cornea was anesthetic. After the edema of the upper lid had subsided there was a complete ptosis, and tenderness over the lacrimal gland. The ptosis and paralysis of iris continued for nearly two months, the corneal haze slowly cleared after many weeks of treatment. After five months of treatment patient was discharged, the eye symptoms having all disappeared. Treatment for the herpes zoster was given by his physician. Pain in the eye was controlled by 1 per cent. holocain solution; boric acid and zinc sulphate solution was prescribed for the conjunctivitis. As the patient had a chronic inflammation of the ethmoid cells with hyperplasia of the middle turbinate bodies, an alkaline spray was used several times daily.

Case 3.—H. F., aged 30, a traveling salesman for a manufacturing pharmacist, was seen, in consultation with Dr. E. W. Meisenhelder, Jr., of York, on April 7, 1917. He gave the history of having been working hard during the winter, exposed to all kinds of weather. His habits are good except that he is an excessive smoker. On April 1, 1917, after becoming wet and chilled while out in a cold rain, he was attacked by severe neuralgic pains over the left side of head. The pain continued and on the fourth day the left eye began to ache, accompanied by lacrimation and photophobia, followed by an eruption over the left side of scalp and forehead extending to and including left upper eyelid. On the tenth day after first neuralgic pains conjunctivitis developed, followed by slight corneal haze of lower half of cornea and semidilated pupil which was immobile. There was marked photophobia for some days after the eye was attacked, although the cornea was partially anesthetic. Small vesicles were seen on the cornea, which coalesced into a small ulcer. One week later as the skin eruption began to subside, the eye symptoms improved and slowly disappeared, leaving no serious damage to the organ. As late as one month from the beginning of the attack of ophthalmic herpes a slight nebula could be detected on cornea, and the patient complained at times of a feeling within the eye like clonic contractions. All eye symptoms eventually disappeared without any impairment of vision or function.

Treatment consisted of the use of codein and morphin internally, for the pain; locally holocain drops in eye; ichthyol and opium ointment applied to the herpetic eruptions, with later applications of stearate of zinc powder. Quinin sulphate was given internally in 10 grain doses three times daily during the course of the disease. Zinc sulphate and boric acid solution was used for the conjunctivitis, and yellow oxid of mercury for the corneal ulcer.

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DISCUSSION

Dr. Edward A. Shumway, Philadelphia: Dr. Klinedinst's excellent paper has covered the essential characteristics of this rather uncommon condition. For a long time the method of the production of herpes has been a subject of dispute, which is by no means settled as yet. Head and Campbell's elaborate contribution seemed to prove that it was caused always by disease of the posterior ganglion cells of the spinal cord, but it is now generally believed that it may be due also to a neuritis involving the trunks of the nerves or their branches. In the case of herpes zoster ophthalmicus, the seat of the lesion is in the gasserian ganglion, which corresponds to the posterior ganglia of the cord, or in the ciliary ganglion or in a branch of the fifth nerve itself.

The fact that herpes occurs in epidemic form is, I believe, not generally known. In conversation, Dr. J. F. Schamberg of Philadelphia said that he had never seen an epidemic, and had not noted that the disease occurred in one season of the year more than in another. A similar experience was found at the Philadelphia General Hospital. That epidemics do occur, however, is proved by cases reported in the literature. Bärensprung, for instance, relates that in 1856 three physicians developed herpes, one after the other, at the Charitè in Berlin, and at the same time two cases occurred in the wards. In 1883 Zimmerlin saw a herpes epidemic in the Bürgerhospital in Basel. There were thirty cases in healthy and sick, among physicians and orderlies and patients connected with one wing of the hospital. House epidemics have also been reported. In fact it has been claimed that herpes is at times an acute infectious disease, with a specific organism, which attacks the posterior ganglion cells of the spinal cord, and sometimes the cells of the sympathetic system, just as in epidemic poliomyelitis there is a specific infection of the anterior cells of the cord, with resulting disturbances of the motor apparatus of the body.

The condition of the face is so striking, that herpes zoster ophthalmicus should not be mistaken for anything else, but in my experience it is not infrequently confounded with erysipelas, and I have seen several cases in the erysipelas ward in the Philadelphia General Hospital, and two cases in private practice. If its definite localization to one side of the median line is noted, and a history of neuralgic pain, either preceding or accompanying the appearance of the vesicles is obtained, there should be no difficulty in making the diagnosis.

A point that deserves especial emphasis is the occurrence of glaucoma occasionally during the course of the attack, when the eye is involved, and even when there is no open ulceration of the cornea. It is often said that diminished tension is a feature of herpes zoster, but in elderly people, the opposite may be the case, and the eyes should be very carefully watched for its appearance. Many such cases have been recorded, and at the recent meeting of the American Ophthalmological Society in Washington, Dr. John E. Weeks of New York reported three which had come under his observation, and had required operative interference (iridectomy) to control the attack of glaucoma. Weeks believes that the rise in tension is due to changes in the composition of the aqueous humor, which render it less diffusible, and prevent its filtration through the lymph channels at the angle of the anterior chamber.

In the local treatment, I think the best results are obtained by the use of dusting powders, rather than of lotions or salves. The vesicles usually do not break, as do those of eczema, and it is best to keep their surface intact as long as possible, and not prevent their natural tendency to dry and scab by the use of macerating salves and wet applications. Powdered zinc oxid, starch, talcum, etc., may be employed, or, if the pain is severe, Dr. Schamberg recommends that morphin and camphor be added, and the part may be protected with absorbent cotton and a bandage. Internally, codein, phenacetin and quinin may be employed, and at times the pain may require the injection of morphin.

Dr. Klinedinst says nothing about the after conditions which are often present. At times there is persistent neuralgia, which is severe and most intractable. Or there may be annoying sensory nerve disturbances in the skin of the affected area, such as anesthesia, tingling or formication, and persistent burning and discomfort from chronic irritation of the conjunctiva. For the neuralgia, croton chloral hydrate has been recommended, in doses of 5 to 10 grains, three times daily, and the use of galvanic electricity along the course of the nerves may be very helpful.

It should be remembered that herpes zoster may be a terminal symptom of some grave form of septicemia, and also in patients of advanced years, and under such conditions is of very grave import.

I would like to add my experience with the use of a new antiseptic which has been worked out in the laboratories of the Polyclinic Hospital in Philadelphia. I cannot give the exact formula now, but it is a synthetic product, a combination of mercury and phenol, or carbolic acid. It is a nonirritating solution, pale yellow in color, and in strength in which employed, as they recommend it, 1:18,000 or 1:20,000 in the eyes, I have found it a very efficient antiseptic.

Boric acid is what we usually employ in all cases of corneal ulcers in various types and in infections of the conjunctiva and cornea. I would recommend from my experience that you try this mercury and phenol. The great difficulty of course in handling any infection of the eye is in finding an antiseptic which will not at the same time injure the local tissue, and I have found that mercury and phenol act very efficiently. I have not tried it in severe types of ulcers of the cornea, but I have used it in place of the boric acid in many types of infection of the conjunctiva and cornea, with excellent results, with an entire absence of irritation from the stronger solutions of mercury, and I may say that I am very well pleased with results.

Dr. Edward Stieren, Pittsburgh: Twelve years ago I reported to this section a series of six cases of herpes zoster ophthalmicus. Since then I have seen ten or twelve more and have come to regard it as a more or less common condition, but one which is not always recognized, as the essayist has said.

In regard to the complication, glaucoma, it has occurred to me, since we are familiar with the pathology of girdle herpes zoster, or shingles, that this may be due through involvement of the ciliary or lenticular ganglion. This you will recall is made up of multipolar cells, a filament from the nasal branch of the ophthalmic, fibers from the motor oculi and a branch from the cavernous plexus of the sympathetic forming its three roots. The gasserian ganglion is known to be affected in this condition, and it is quite probable that an inflammation of the lenticular ganglion also occurs, which could bring about dilatation of the pupil with increased intraocular tension through its sympathetic fibers.

I do not believe herpes zoster is contagious. It is probably due more to climatic conditions and to the habits of those afflicted. In all the cases which I have seen it occurred in individuals of sedentary habits, who after some fatiguing experience were exposed to inclement weather conditions.

COOPERATION IN TREATMENT

THE BASIS OF SUCCESS IN VARIED FORMS OF OBDURATE AND PROTRACTED MALADIES IN WHICH NERVOUS OR PSYCHOPATHIC FEATURES ARE PROMINENT

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The war is compelling physicians to realize the paramount value of cooperation, of organization. Indeed, the surgeons are talking seriously and wisely of standardizing many procedures. So, too, of hospital management and administration. Each and every physician should realize that he, too, must not only accept this mutualization, but must do his part or, what is better, lead in the movement for progress, for otherwise he will be left like flotsam on the shore.

For centuries the medical man stood serenely alone on a pinnacle of individualism, of esteem, of respect, indeed of a little awe. New conditions, increasingly complex and diversified demands, render it obligatory for our profession to recast their methods, and the first step is to appreciate the change; also how you and I, each one of us, can react most favorably, or least unfavorably, to this changed environment.

Let me offer a few remarks on cooperation, mutual helpfulness, such as we can put in practice now and anywhere. These thoughts were presented in a paper some years ago limited to nervous diseases. Recent experiences only strengthen my convictions that, unless we cooperate more cordially and confidently, we shall miss much and our patients will miss more.

Joint action among specialists in different lines, also among the family and the patient, is necessary for success.

True diseases involving the nervous system are proverbially complex and difficult to limit or cure. Dissatisfaction is expressed by all interested parties. Especially do neurologists lament the inadequacy of remedial measures in protracted and disabling conditions. This ineffectiveness is less real than apparent. Our resources were never so abundant nor so potent. They must, however, be rightly selected, combined, and expertly supplied from different angles. One chosen adviser is not qualified (as popularly supposed) to personally minister to every aspect of the undertaking. Confident reliance on one man is a precious tradition, but radical results here can be no more efficacious than in other fields of endeavor.

I

"Nervous disease," so-called, may be divided into two groups: one, the smaller, includes diseases of the brain, spinal cord, nerves, and directly correlated structures; another and much larger group comprises diseases of heterogeneous origin in which neuropathic and psychopathic phenomena occur as dominant features. Among the latter are disorders in which disease processes are negligible, except as a background for psychoneurotic manifestations. This variegated group forms the most promising field for clinical endeavor since in it lies the majority, certainly of the less grave but of amply complex and puzzling cases seeking aid of both neurologists and general practitioners. The task is to evaluate and determine the effects of diseases and disorders upon the particular individual; to limit them and to restore the patient to that degree of health of which each is capable. Serious structural affections of the brain and nerves, organopathies, neuropathies, and especially their effects, are notoriously difficult to modify or control; only rarely can they be cured. Few men, even though they be wonders of neuropathologic acumen, are capable of becoming experts also in use of the many varied and highly specialized agencies for repair or to successfully qualify as masters in all departments of therapeutics. For them it would seem a large enough demand on time and capacities to diagnose and to efficiently supervise treatment. The domain of nervous disease *per se*, neuropathies and degenerative processes, is enough to keep one man amply employed. They are of gloomy outlook, but advancing resources afford much hope; they need not remain unrelievable. Nervous disorders, dissociation of neurones or personalities, psychopathies in their kaleidoscopic mutabilities, are capable also of taxing the resources of any individual. To do them justice, cooperations are needed to yield the combined physical and psychical key.

The whole group of emotive disorders to which the inadequate term "hysteria" is still the popular but misleading designation, constitute a volume in themselves. These are the most numerous, constituting in their milder degrees a majority of most clienteles. The principles of therapy for this multitude are much alike. There are many common denominators, equivalent principles of action, convertible procedures. They require similar rescue methods and especially reconstructive measures making for both psychic and physical disentanglement, uplift and restitution. Simple as the ingredients may be, special artists are demanded to produce the best fulfilments. Any one man who assumes the responsibility of treating from start to finish all the phases of these metonymic disabilities accepts too large an order. To attempt alone to do one's duty by each and all is bewilderingly perplexing, especially with only unskilled, selfmade or halfmade experts, nurses, clinical assistants. By doing so one invites failure, blunders, and may meet well-merited blame. Worse than all, many entirely curable persons are thus made irremediable derelicts. Among these are often exceptionally valuable citizens brought to a standstill by overstrain and the giving away of weakened tissues, of disorganization of psyche or of substance.

Many conditions encountered among nervous diseases, disorders, and their effects, being generic to other kinds of disability, require similar reconstructive measures. From them all emerge factors stimulating diagnostic skill and arousing therapeutic resourcefulness. These problems range all the way from conditions originating in developmental errors, aggravated by disabling circumstances through acute, subacute, and chronic diseases to degenerative and disintegrative processes. They involve also static or other gross structures, the sense organs, vegetative and reproductive, cardiovascular, renal and eliminative organs, also the great governing mechanisms, the adrenal system, all in addition to those morbid conditions of the nervous system from which the more graphic features may be derived.

Strange manifestations often occur through vasomotor vagaries, autonomic complexities, plus and minus vagotonies, and sympatheticotonies. Then beyond and behind all these are hypertonies and hypotonies or instabilities of the ductless (endocrinous) glands. All these must be reckoned with before we get down to the levels of structural or other alterations in the brain, spinal cord or nerves and their particularized effects. .To be sure, there are innumerable kinds and degrees of neuropathic and psychopathic tendencies, all harking back etiologically to familiar mental origins with bizarre settings. The reason why better results are not achieved are, among others, that interest in neuropathologic problems is still exhibited overmuch in scholastic or strictly scientific research and too little in the alleviation of distressing or disabling by effects or residua. Also myriad extravagances in healing methods are exalted by unreliable enthusiasts which excite more suspicion or condemnation than they deserve.[1]

The mind of the scientific investigator is by nature and training skeptical; it tends to esteem dissent as wiser than expectation or hope. His aim is, and should be, to unravel the tangled skein of obscure causes by relentlessly pursuing elusive origins through mazes of complex, often inexplicable phenomena, and to reach the efficient source; to map out structural relationships, associated and interdependent insignia, and always to reject phantasmagoria. Such training is the antithesis of hopeful conservation, of optimistic reconstruction.

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[1] Smith Ely Jelliffe said in his presidential address: It had seemed feasible to regard the nervous system, speaking broadly, as operating at three levels; through the course of ages these had been built up, not sharply delimited, but gradually and imperceptibly merging the one into the other. These familiar levels he would speak of as the vegetative, the sensorimotor, and the psychical levels, respectively, and would use the terms, vegetative neurology, sensorimotor neurology, and psychical neurology, not as indicating three different kinds of neurology, but rather working at different functional levels, no one of which can be neglected.

The *fons et origo* of healing forces, of remedial efficiency, of therapeutic certitude, is hopefulness with a parabolic curve toward optimism. To overcome morbid agencies, psychic or physical, the efficient agency must possess, in addition to reconstructive energetics and restorative capabilities, a large measure of promise which needs to be presented in its most impressive manner. There is needed an atmosphere of confident expectancy. This may well be subjected to special modifications in full accord with tact and diplomatic adaptations in individual makeup, with peculiarities, previous history, social plane; the mental, moral, and even religious training. The status of physical development always demands careful investigation, especially any disturbing effects of previous somatic insults, not alone residua of disease, or of nutritive defects, but also the circulatory status. Cardiovascular loss of tone is oftentimes the one factor most demanding restitution. The psychic impulse must invariably receive attention.

II

Cooperation with the dental surgeon: The significance of certain dental lesions, especially the insidious nonsensory variety, also of impactions, has been shown to be often vital in affecting nerves and brain. Not only are these effects of dental irritation, obvious and direct through pain causing exhaustion, lowered resistance, and the like; but also by infections bearing heavily on general or local health, and especially by reflex effects through subconscious or nonsensory peripheral irritation.

Anyone will doubtless concede the despotism of the aching tooth, the acute abscess, the humiliating pyorrhea alveolaris, but when the profoundly momentous, subtle, long-continued reflex perturbation induced by steady pressure exerted on a nerve terminal, the slowly accumulating excitation of an impaction, is brought to the foreground of attention, too often it is disallowed or even ridiculed. Only briefest reference can be made here and now to this cardinal domain of cooperative effort. It is true little will be found as yet in medical literature. A surprising mass of testimony is available in dental literature in the form of case reports, roentgen-ray details, pathological findings, and the like. All this now needs correlation, association, and should be reduced to sequences and determinations. While the instances wherein this factor has proven paramount may be few, they deserve full consideration in connection with any baffling or seriously retrograding state. Personally I have had many vivid experiences in which, the apparent dental cause being removed, there eventuated extraordinary and unexpected betterments, notably in the psyche. In others the gain was decided; in others no decision could be reached as to which factor was dominant. Too often little or no relief was thereby obtained, none the less an operation was fully justified as would be any other *dernier resort*. Evidence as to the etiological bearing of dental irritation is not yet massive, except in the rich findings, case citations, and the like, in dental and roentgenologic literature, which the Upson Foundation now affords means for collecting and digesting. As a clinical resource it promises much in the face of otherwise hopeless neurogenic or psychogenic miseries. It is my opinion, affirmed with increasing confidence, that no neurologist does his full duty by certain kinds of cases till a roentgen-ray plate is made of all the teeth wherever suspicion is aroused as to possibilities of dental irritation being a casual factor in disorganization of psyche or substance. Psychoses due to irritation by impactions are said by Upson to differ in no notable particular from those due to abscess. Critical study of suppurative processes shows that not only the quantity of the absorbed pus, but likewise its situation as an irritant as well as its neuronic associations is a determining factor in somatic or psychic integrity. An abscess is commonly despotically obtrusive. It may cease to be so by reason of subsiding degrees of suffering, and by compensations. The pain grows less, or awareness becomes obtunded, till it sinks below the threshold of consciousness, yet continues to exert irritation, inducing deeply acting, far-reaching effects.

Briefly, the short and certain route to health is the removal of any tooth exhibiting any marked irritation due to impaction or any recognizable evidence of alveolar abscess. To be sure, too few dental surgeons can as yet be induced to accept this radical view, they being trained to save the tooth whenever possible. Appropriate dental relief procedures, radical in character, are available, which surgeons are now capable of supplying if they will. Root amputation with scraping of periosteum is an efficient measure but may be overdone. The best measure is cleaning out the root canals and disinfecting by dichloramin-T.

The results of pus removal must emphatically be complete and thorough, or the neurogenic abnormality will persist, and valuable time and remediabilities will be lost. Insanities may and do result. A life may be blighted to save a tooth as I well know. Instances could be cited in which indomitable persistence over a period of time was required to achieve the dental emancipation.

III

Reconstructive Personal Hygiene: This includes regulation of items of conduct particularized for definite needs, whereby latent powers can be rendered available, inherent energetics brought to the front to meet exigencies of the individual in overcoming difficulties, in restitution of function, chiefly along the sensorimotor levels.

Postulate: Body and mind are one and indivisible. Physical training is equally mental training, restitution of nerve centers and subcenters. Enormous potentialities reside in training voluntary movements with the purpose in view of readjusting static and also other mobile structures (kinesitherapy), hence making for mechanical easements of local pressures interfering with function, also expediting local and general nutrition, hence for restoration of local disabilities. Note the significance of errors of posture, the economic advantage of recovering impaired degrees of attitude, of mobility, of pliancy, of flexibility, of elasticity, *e. g.*, in the thorax, the spinal column and accessory structures; also of tonus in supporting structures, abdominal walls, compensatory action of diaphragm, and the like. By such motor regulative measures stagnation is relieved in viscera, especially in the lower abdominal quadrants, activation of circulation, of lymph propulsion, of venous blood, of nerve impulses, also of reaction times and other factors of thigmotropic readjustment bearing on biochemical and also psychomotor and sensorimotor competence. Note also the corollary rest treatment (akinesitherapy), abundantly elaborated from Hilton to Weir Mitchell, Playfair and modern phthisiotherapists. Note also that passive movements or chiefly passive and moderately cooperative movements demand the personal attention of the physician or at least his critical supervision and particularized direction. This measure has not begun to receive the scientific scrutiny it deserves; as yet it can only be known by one who has labored faithfully in the field and compared effects. Among the conditions in which judicious passive, stretching, torsion, or hand applied movements are capable of large and increasingly beneficent consequences are: resultants of poliomyelitis, cerebral palsies, tabes, some paraplegias, effects of some cord lesions, some stages of neuritis and some of paralyses of special nerves, of most neuralgias (notably when fibromyositis is present), in tics, spasms, also most valuable in paralysis agitans (see three papers by the author). Occasionally also in acroparesthesia and in paralysis of plumbism. Also in some of the disabling and distressful phenomena of premature aging, of senile degenerative processes, in arthropathies, in cardiovascular changes, in impairment of sensorimotor integrity, notably of the ear, eye and nasopharynx;* disabilities of the neuromuscular mechanisms, and particularly of the gastro-intestinal tract, flatulence and minor shocks, intestinal stasis, adhesions, kinks, angulations, also enteroptosis, nephroptosis, local tonic spasms or relaxations of abdominal parietes.

The whole splanchnic blood-vessel system which, when markedly depressed or stagnated contributes largely to the effects, if not the causes of, neurasthenic, psychasthenic phenomena are alleviated by hand pressure and lifting of the subdermal structures, training of the abdominal parietes, diaphragm, thorax, and correlated semi-voluntary structures. Also "the great skin heart," the surface blood vessels, so often assumed to be normal in a given case of nervous disease yet in reality disordered, are vastly benefited by subdermal traction, the full equivalent of "passive hyperemia"; this often constitutes the key to progress.[2]

As an example of kinesitherapy in nervous disorders let me cite cooperation in treating the effects of cerebral palsies. Factors in cerebral palsies, causes and conditions to be reckoned with, are: (1) Primary damage to motor centers and areas of brain, and (2) to subsidiary centers; the problems and phenomena vary with age and condition of life, stage of evolution in development and in growth forces, producing alterations in structures upon which primary and secondary effects are wrought. (3) Limitation of motor capacity and coordinate efficiency due to: (a) original damage, partial or complete; (b) depreciation in motor impulse and in encouragement to energizing from, or discouragement to energy, hence arise formation of habits of inactivity, indifference, cessation of effort, hence increasing incapacity; (c) local spasms, contractures, rigidities, impairments of tissue elasticity, mobility and pliancy; (d) concurrent myopathic disabilities, connective tissue and aponeurotic changes, fibromyositis. Do not lose sight of the immediate value voluntary movements afford to cerebral and spinal centers. This Weir Mitchell pointed out to me thirty years ago.

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*See article by author in Medical Review of Reviews.

[2] I have repeatedly been able to afford unexpected relief to a host of obstinate disorders by giving adequate attention to the skin, loosening the adherent subdermal structures, the chief seat of nerve, blood and lymph distribution and supply, which thus can be freed from compression, stagnation and the whole organism benefited. [See paper by author "Cardiovascular Renal Regulation," *International Clinics*, Vol. 1-24, Series 1914.]

Motivation becomes impaired all along the line from primary impulse to precision in execution. Whether there exists an abnormal weakness or fatigability may be in doubt; certainly impulse to energize is diminished, probably because of long disuse and discouragement. Hence the motor cells involved in the brain need awakening and stimulating by conscious motor impulsion. The question then presents: how far can primary effects be overcome? (1) By mechanical and other stimulation, by volition, by domination of one's self or by extraneous domination, and (2) also by passive effects wrought by electricity. (Many cases will be found to have received ample electrical treatment from the first.) (3) By passive movements, stretching, torsion, and specifically guided by motor training.

IV

The late S. Weir Mitchell was a marvel of proficiency in curing patients. Those associated with him professionally usually endeavored to appropriate and apply his methods. To those of his assistants like myelf, having experience with other neurological clinicians, illuminating contrasts are afforded. In my opinion the chief instrumentality of his amazing successes was his prompt and cordial cooperation with experts in correlated lines, himself not attempting to do it all. The distinguishing characteristic of Dr. Mitchell was his radiant energy and his clear-sighted recognition of the value of joint action. He so stimulated the zeal of his adjutants as to get the best out of them not only in diagnosis but in treatment. Thus an efficient coalition was constantly at work. He uniformly said and did the judicious thing to create and maintain team work. In leadership he was wisdom personified in plan, in strategy, in shifting the point of approach, in creating useful surprises, in persistent effort, thus achieving the most economic and permanent results.

The patient was taught and insensibly assumed his or her share in the campaign. In my long years of association with him it always seemed his tactful management surpassed in curative efficacy all other measures. His remedies were generally of the simplest, most rational, well chosen, and above all, consistently applied and over sufficient periods of time. He uniformly depended upon the united efforts of all collaborators, conferring on them a measure of responsibility by deferring to their judgment, making them sharers in the credit for successful endeavor. Thus not only were sidelights supplied on obscure problems, but no force was lost in the transmission and concentration of beneficent energetics. He conferred an element of partnership on nurses, masseurs, clinical and laboratory assistants of various degrees; on specialists whom he freely consulted, highly esteeming the findings of experts in the sense organs, in surgery, gynecology, orthopedics, electricity, massage, remedial exercises to an extent then unheard of, and even now unsurpassed. As newer sources of evidence came to the front he eagerly welcomed them. He was among the very first to realize the significance of "the pathology of the living"[3] as now furnished by modern surgeons after removal of concealing structures, and then seeing, touching and readjusting the parts below.

Thus was assembled a complete group of precise observations, reliable findings and candid opinions. Each ally was put upon his mettle by the flattering openmindedness of the "chief." Mature judgments were thereby formed consonant with the facts at issue. Doubtless master clinicians now aim to do most of these things. Then we who worked for him constituted a unique confraternity. Every one of us who enjoyed his confidence strove to surpass ourselves in winning his approval and in contributing to desired results. There were times when so large and varied was the company of sufferers seeking his help that omissions must have occurred, even blunders, had he not welcomed and harmonized our best efforts. So devoted were we to his personal interests that our vigilance and loyalty filled in many gaps and added materially to the success of the economic régime.

Dr. Mitchell was preeminent in penetration, in a knowledge of mankind on all social planes and conditions of life; in subtle appreciation of niceties of difference in mental and moral make-up; in those factors which contribute to peculiarities in belief, fears, hopes, ambitions, and in solution of domestic tangles. Above all, he had vision, instinctive awareness of complexes and of the essential needs of any invalided human being. He was well versed, not only in physical but also in mental and moral pathology. He likewise became an adept in unusual remedial agencies which many neurologists even now regard as beneath their attention or confidence. For example, he himself had learned to apply massage, various manipulative measures, and hence was quick to determine the capabilities of masseurs and judge the quality of their work. He could and did teach precisely what he wished done for a particular condition.

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[3] See Sir Berkely Moynihan's fascinating little book.

Many neurologists declare, for example, there is little or no real value in massage. Thus they either unfairly belittle it or are incapable of appreciating its potentialities, or of directing its use. Of course, no efficient results can follow such half-hearted measures. Dr. Mitchell was also a master in the art of using the simple agencies, heat and cold, baths (balneotherapy), wet packs, drip sheets and the like, showing shrewdness and originality in modifying and adapting all such physicodynamic measures to meet varying conditions. So also of a host of other remedial agencies which are too often either omitted for lack of knowledge of the principles or unfamiliarity with or unawareness of the nature of effects to be expected. To nurses he supplied a new and liberal course of instruction in their own art; a special group of experts were thus evolved. So likewise of his clinical assistants. We entered a novel and fascinating school of resourcefulness and art. Upon us devolved a new and varied line of duties scarcely hinted at in the schools.

We were kept busy in an ever-improving yet simplified system of reconstructive hygienic measures the purpose of which was to raise the vital index and the psyche of an individual to a higher plane than it had ever reached before; to render latent powers available; not alone to remove urgent disabilities. In short, we were grounded in the fundamental principles of therapy, viz.: to render the best kinds and qualities of joint service in our power to a sick human being.

1504 Pine Street.

HER KIND OF MEASLES

During a session in the primary room at one of the local schools recently, one of the scholars "broke out." The teacher sent her home with a note to the effect that she believed the child had measles, but "perhaps only German measles." When the mother read that part of the note, the child screamed out: "I don't like that old teacher! I haven't got German measles. I got 'Merica public measles!"—*Indianapolis News.*

SELECTIONS

EVERDAY PATRIOTISM AND WINNING THE WAR

There is the making of a true patriot in every man, even though he may never see a uniform or attend a flag raising.

The real patriotism consists in doing your work well—giving the best service that is in you—giving it with a wide-open heart, with the thought that all you can have, all you can hope to have, you can give to your country's call.

This should be the platform, the creed, of patriotic business. We can serve our country best by doing our level best in whatever line of endeavor we have undertaken.

Honest success, wherever achieved, is patriotic, provided there is back of it a willingness, a purpose, to give whatever is needful to be given to the country's service.

So it is not always the man in uniform; not always the man leading the charge; not always the man plugging the U-boats, who has a monopoly on patriotism. These men have offered their lives, their all, that their country may be preserved from the foot, or even from the attempt, of the invader. They can give no more.

But back of these men—an essential complement to them—are the patriots of peace, or, rather, of peaceful endeavor — the builders and the workers — the hewers of wood and the drawers of water.

And no matter how humble in rank, each is a patriot who does his duty as he finds it, does it well, and stands prepared to give what he has, in service or in wealth—perhaps in both—to the safety of the nation.

Giving, of course, presupposes the ability to give. To give we must have or we must earn. And none should cease to earn, through service, as long as he is endowed with the earning power.

Only in this way can we meet our country's call. Only as we earn can we pay the taxes it demands, buy Liberty Bonds and War Saving Certificates, and do our duty by the varied activities which strengthen and lighten the burdens of the men who are fighting for us.

We cannot all fight in the trenches. But if we do our duty—our level best—here at home, we have supported the man in the trenches and made it possible for him to fight a better fight. We have stood with him; we have held him up.

That's our fight, and it may be just as patriotic, just as courageous, as if we fought it with machine gun or bayonet.

It is, if we make it so.—Dr. Joseph Jacobs, in the *Druggists Circular.*

PROPHETIC

For I dipt into the future, far as human eye could see,
Saw the vision of the world and all the wonder that would be;
Saw the heavens filled with commerce, argosies of magic sails,
Pilots of the purple twilight, dropping down with costly bales;
Heard the heavens filled with shouting, and there rained a ghastly dew,
From the nations' airy navies grappling in the central blue;
Far along the world-wide whisper of the south wind rushing warm,
With the standards of the people plunging through the thunder storm;
Till the war drum throbbed no longer and the battle flags were furled
In the parliament of man, the federation of the world.

—Tennyson, About 1840.

DR. FREDERICK L. VAN SICKLE

THE PENNSYLVANIA MEDICAL JOURNAL

Published Monthly Official Organ of the Medical Society of the State of Pennsylvania

CYRUS LEE STEVENS, A.M., M.D., Editor

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ATHENS, PA., SEPTEMBER, 1918

OUR NATIONAL PHYSIQUE

High authority claims that our national physique has been slowly and gradually deteriorating for a century, as the result of an amalgamation of physically inferior immigrants in great numbers. If this statement be correct, then the present would seem to be a hopeful period from the viewpoint of racial improvement since the war has caused a cessation of immigration. The recent draft examinations have shown an appalling list of physical defects, so that the necessity for increased attention to physical education in our public schools, colleges and universities is obvious. It is interesting to note that the examinations of men for the service have shown that the young men from the country are apparently as healthy as their city brethren, contrary to accepted previous opinion. It was observed that the "manufacturing states of New England and the East made the worst showing in the physical examinations for the service."[1]

Health authorities generally believe that health stands first among the principal factors that will win the present world war. It is, therefore, clear that no national policy can afford to disregard the matter of physical fitness. The question, however, has not received adequate attention on the part of governments in general in the past. To have permitted a steady, though slow and gradual decline of our national physique during a period of unparalleled advances in sanitary science and preventive and scientific medicine is well-nigh inconceivable. It is to be hoped that, after the war, immigrants will be submitted to a closer inspection than has obtained in the past.

In the meanwhile, the aim should be to put into effect a system of better hygienic living, including proper attention to systematic physical training so as to raise the health standard of the American race. If all available agencies were to cooperate, it seems reasonable to suppose that a plan to improve the situation with respect to physical fitness would be quite possible. For example, if the heads of our varied industrial concerns could be made to realize that greater efficiency of their employees would be the natural result of daily muscular exercise, such as setting-up exercises, that physical fitness is purchasable and that it would prove a good investment, then efforts could be made with excellent chances of success. Malnutrition among school children and public education in personal hygiene and sanitation are vitally important questions that demand ever-increasing attention on the part of the organized medical profession and health officials. Progress in these matters could be made if other states were to follow the example of Massachusetts and establish annual schools of hygiene, as well as by holding public health meetings as has been done recently in Philadelphia.

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[1] Child Labor Bulletin, February, 1918.

A propaganda that seeks to improve the national physique has an increasing claim on the medical profession, for it should be remembered that in these days, the physician is essentially a sanitarian and that his knowledge of hygiene, sanitation and preventive medicine, enables him to render effective service to the public along these lines. The whole profession of medicine should feel itself drawn on, especially in the present great crisis, to lead in efforts to enlighten the nation with respect to the necessity for greater physical fitness and the ways in which this can be best accomplished.

J. M. A.

ARE WE DOING OUR FULL PART?

Attention is called to the following letter from the president of the American Medical Association. Most of our county societies already have a War Committee, but there is work to be done if the medical profession in Pennsylvania is to keep her place in the front ranks in war work. Systematic work is needed so that there may be no slackers among our doctors and so that rural communities, industrial plants and necessary hospitals may not be unduly handicapped. The War Committee of each county society must act firmly, fairly and courteously so that it will be accorded the respect and authority necessary to accomplish the delicate work given it to do.

The Bucks County *Medical Monthly* is authority for the statement that "every member of the North Penn Clinical Society—to the man—under 55—was game and applied for examination and commission in the Medical Officers' Reserve Corps, and came out nearly 100 per cent. good." If we would all do this it would greatly lessen the work of the War Committee, as it is much easier to insist that a volunteer is imperatively needed at home than it is to say to Dr. John Doe that he should apply for a commission. Let us not be too severe with the medical man who has not enlisted. Some, it is true, have too high an opinion of the home need of their services, and others lack real courage, but many have good reasons, physical or domestic, for hesitating. Jump in and let the government say whether you are physically fit, and the War Committee will protect your community. Uncle Sam is not yet so hard pressed for physicians that he will refuse to listen to the protests of authorized committees.

Chicago, July 23, 1918.

Dr. Cyrus Lee Stevens, Sec'y,
Medical Soc. of the State of Pennsylvania,
Athens, Pa.

My Dear Dr. Stevens:—The medical profession of the country is confronted at this time with the problem of organizing the profession for war. There are two specific things that must be done. We must furnish to the government the necessary number of medical men for military service; this probably will be from thirty to forty thousand medical officers. At the same time, we must supply this required number of medical officers in such a way as to injure as little as possible our civilian communities through depriving them of necessary medical services. This carries with it the obligation not to cripple seriously the medical schools nor our hospitals.

In order to meet these requirements it is necessary to use the organization of the medical profession in a systematic way. The most important agency that can be employed in this work is the American Medical Association, with its splendid organization of county and state branches and the efficient machinery which it possesses.

The Journal of the Association reaches the great majority of the medical practitioners of the country and it, together with the journals of the state medical associations provides a point of contact with practically the entire profession.

One of the facilities of the Association which could not be duplicated even by the government itself, at unlimited expense, within any reasonable time, is the data from which is compiled the register of licensed physicians—the American Medical Directory. This is information concerning each licensed physician which has been gradually and systematically assembled, recorded and indexed in the course of years, at the headquarters of the Association.

These card indexes of this data concerning registered practitioners of medicine at the Association headquarters is of great value. They made possible the "Survey" of the medical profession of the United States, which was published in *The Journal* for June 1, and which is, therefore, now at the disposal of each county and state organization. They can be utilized in conducting a campaign for providing future increments for the Medical Reserve Corps by making an individual study of the practitioners in each county, to determine the physicians who have gone into military service, the ages of physicians, and other information which will assist in working out the problem.

The medical profession has responded more promptly to the call of the nation and has sent more of its membership into military service than any other profession, trade or business in the country. It was necessary that they should do this because the demand for medical men in war is larger than the demand made on any other profession. The fact remains, however, that the profession has responded magnificently to the call to the colors. As the war continues and as the great military machine which is being built by the people of this country becomes greater and greater, it may become necessary to draft the medical profession up to 50 or 55 years of age, but this will not be done and should not be done unless the draft applies to all professions, to all trades, to men in all of the fields of human effort. It is probable, in fact it is almost certain, that the medical profession will be able to supply the necessary number of men by proper utilization of the organization and machinery of the American Medical Association and its component county and constituent state medical organizations without resort to draft.

With that end in view, I am writing to you and to all the presidents and secretaries of the constituent state medical associations and asking that the county medical societies of their state be organized for the purpose of accomplishing the following results:

1. To secure at least 20 per cent. of the registered practitioners of the state for the medical department of the Army and Navy.

2. In securing these men, a careful survey of each county, each medical school and each hospital should be made. No locality and no institution unless it is clearly oversupplied should be allowed to furnish more than 50 per cent. of its licensed practitioners; the association will endeavor to cooperate with the medical departments of the government in securing the necessary protection to communities, hospitals and medical schools.

3. Although it is desirable to secure at least 20 per cent. from each county, care should be taken to analyze the local conditions, the area of the county, the population of the county, the number of practitioners *per capita* in the county and as a general proposition, I suggest that at least one physician be retained at home for each 1,200 or 1,500 population.

As you know, the Surgeon-General of the Army has recently called for 5,000 men (see *The Journal of the American Medical Association* for April 13, 1918), and the Surgeon-General of the Navy needs from 1,000 to 2,000 men. The plan which I am outlining to you will secure the number of men asked for to the present time. If it becomes necessary to call a larger number, it will, of course, be necessary to increase the percentage furnished by each state, possibly to 25 per cent., instead of the present 20 per cent. It will be desirable for you to organize your state so completely and thoroughly that if a further call comes from the government, this can be promptly met.

As president of the American Medical Association I am asking you to use the machinery and organization of your state and county societies in the most efficient and earnest way for the definite, concrete purpose which I have outlined. It is clearly the duty of the American Medical Association and its organization and machinery in the fullest possible way to meet the requirements; we all welcome the assistance and cooperation of all associations and agencies that may prove of service in securing the desired results. In doing our part in the organization of the medical profession for war, we gladly place directly at the disposal of the medical departments of the Army and Navy our entire organization and machinery.

The American Medical Association is now preparing and will shortly make available to the secretaries of the state associations and of the county societies complete lists of the licensed physicians in the respective states and counties. On these lists symbols will be entered indicating the response which the physicians named have made to the call of the nation.

This work is in charge of the secretary of the American Medical Association who will communicate directly with the secretary of the state and, if desired, with the county organizations.

Yours very truly,
Arthur Dean Bevan, President.

WE MUST SERVE WHERE WE ARE PLACED

We are engaged in the greatest war the world has ever known and have to contend against Germany, Austria, Turkey and the grave complications in Russia and other smaller countries. It is now the fifth year of the war and yet there has been no fighting on German territory if we may except some dropping of bombs from air planes and attacks on her colonies. Our Allies have put up a brave, stubborn and successful resistance, but from now on the burden must necessarily rest to a large extent with America. It is our business to win the war. The sooner we realize this the less it will cost us and others in dollars, heartaches and lives. There may have been mistakes here and there, but this is the time for sacrifice and boosting, and not for complaint and knocking.

Those who have been in the trenches wonder at the absence of complaining on the part of the soldiers who have been called upon to endure the indescribable hardships which have been worse than death to the millions of their comrades. Shall we, here in this land of plenty, put forward our petty grievances? No, we cannot, we will not! The first American soldier to be wounded was a physician, and the first American soldier to give up his life was a physician.

Let no physician dare to suggest that Capt. John Doe may not be the equal of Lieut. Richard Roe, or that Lieut. So-and-So has a nice job in America while Lieutenant Blank is put in the thickest of the French front. Age, physical condition, scientific or executive ability, natural aptitude, time of enlistment, experience, possibly even personal acquaintance has had much to do with the granting of rank, while all these factors with the addition of mere chance has had to do with the making of assignments to duty. Medical men are needed in civil hospitals, in clerical positions, in army camps and cantonments, just as much as they are in base hospitals or front line dressing stations.

Those familiar with conditions know full well that many commissioned physicians patiently doing their work in "nice positions in America" are really anxious to go "over there" and are quietly chafing because the soldier's first duty, obedience, keeps them in their present positions.

The writer has a cousin in the regular army who, since the war began, has been faithfully doing laboratory work in Washington, New York and Texas, but whose strong desire has been to go to the front, and only last month he reached France as a major. We are all familiar with such instances. Apply for a commission now, dear doctor, and Uncle Sam will see that you receive in due time the rank you deserve and the assignment that will make your services of value in this gigantic struggle, even though it be to teach in some medical school or take charge of some hospital or industrial plant. "They also serve who only stand and wait" if they wait subject to orders. Let not your children ask why you were one of the few physicians who received no commission.

VOLUNTEER MEDICAL SERVICE CORPS

At a special meeting of the General Committee of the Medical Section, Pennsylvania State Committee of the Council of National Defense, held in Harrisburg, Aug. 22, 1918, and presided over by Dr. Frank C. Hammond of Philadelphia, the following Executive Committee of the Volunteer Medical Service Corps of the United States, for Pennsylvania, as named by the Central Governing Board, Washington, was approved: Drs. J. J. Buchanan, E. B. Metzgar, Pittsburgh; W. A. Pearson, W. D. Robinson, E. E. Montgomery, E. P. Davis, Philadelphia; H. McGowan, J. B. McAlister, Harrisburg; E. A. Krusen, Norristown; L. H. Taylor, Wilkes-Barre; S. M. Free, Dubois; G. F. Bell, Williamsport; J. H. Comroe, York, and M. J. Locke, Bellefonte.

At the organization meeting Dr. J. J. Buchanan, Pittsburgh, was elected chairman, and Dr. Julius H. Comroe, York, secretary.

J. H. C.

THE MEDICAL-COMMERCIAL MAN

The commercial men one meets at the exhibit of our state society are, as a rule, at the top of their profession. By hard work and intelligent application they reach this stage. A good salesman is a student of human nature. He is able to distinguish between true interest and idle curiosity, but he does not permit this knowledge to warp his interest in the prospective purchaser. He knows when he is not interesting, and he dislikes above everything the "know-it-all" type.

What the commercial man knows about therapeutic subjects is the result of laboratory experiments, and these experiments, for the most part, are undertaken because of some medical man's suggestion or because of some urgent therapeutic necessity. The medical salesman is a good listener because he is always on the lookout for therapeutic suggestions, and because he realizes that he may be able to pick up good points in the most unexpected places. The expert salesman will tell you that the easiest men to approach are those who have reached the very top of the profession. The little man is too busy to listen—never too busy to talk; therefore, a professional business interview under such circumstances is a waste of time. What the big men in medicine want and what the expert salesman delights in is a short snappy exchange of opinion—the rest will take care of itself.

Try it at our commercial exhibit this year.

W. H. C.

YOU CAN CHARGE UP EXPENSES TO PHILADELPHIA

If you are hesitating about going to Philadelphia on account of expense, just remember that you can charge up your expenses as professional expenses when making your returns for income tax next year. The government realizes that attendance at medical society meetings is just as necessary as oats for your horse, gasoline for your car, or medical and surgical supplies for your office. Will you meet us at the Bellevue-Stratford, September 24?

CLINICS DURING PHILADELPHIA SESSION

The local Committee on Clinics has arranged a program of clinics for Monday, September 23, and Friday and Saturday, September 27 and 28, no clinics being permitted by the rules of the society on Tuesday, Wednesday and Thursday, the days devoted to the Scientific Program. The entire program has been so arranged and the hours so adjusted as to make it possible for a member to visit several hospitals each day, and an attempt has been made to provide a review of the best and choicest material in every department of medicine, surgery, the specialties and the laboratory. The program is too extensive for publication in The Journal, but will be printed in a separate pamphlet and distributed at the registration office. L. J. H.

EVENING PROGRAMS AT PHILADELPHIA SESSION

There will be a Patriotic Meeting on Tuesday evening, the President's Reception on Wednesday evening and moving pictures on Thursday evening during the Philadelphia Session. The committee is purposely delaying full announcements of this part of the program in order that the most appropriate and best talent available for that week may be secured. The member who fails to attend the Philadelphia Session will have occasion to regret his absence.

COUNTY SOCIETY DUES FOR 1919

The *per capita* assessment for 1918 has been remitted by the state society for 903 members whose dues to the county societies were remitted. Probably not more than one forth of these would have continued their membership had they been required to pay their dues for the present year. As many more members paid their dues for 1918 and later entered the service. By next March two thousand of our members will have been comissioned in the various branches of the service, and the organized profession should protect their membership. How is it to be done? Can the state society continue to remit their *per capita* assessment? Three societies, Clearfield, Indiana and Jefferson, this year remitted the annual dues of their members and voluntarily paid to the state society their assessment, and this is the rule in several states. Will our component county societies be willing to do this for 1919? This is a matter that should be considered by county societies so that intelligent action can be taken at Philadelphia this month. There is also a proposition to increase the *per capita* assessment $1 and apply the increase of revenue to the support of an executive secretary. This matter should be considered by county societies before the Philadelphia Session.

The longer the war continues and the more of our members enter the service the more patriotic and energetic must the rest of us become. The interests of our profession and of our country demand that the medical organization shall not be allowed to wane. Each member must be willing to do more and more for his country and profession, but it is the officers, especially secretaries, of state and county societies that must be doubly alert and loyal.

CHANGES TO MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported up to August 20:

Armstrong County: *Removal.*—A. M. Kalson, from Chickasaw to 1315 Epiphany St., Pittsburgh (Allegheny Co.).

Beaver County: *Removal.*—John D. Stevenson from Aliquippa to 340 College Ave., Beaver.

Bucks County: *New Member.* — Charles A. Walter, Glenside (Montgomery Co.).

Butler County: *Removal.*—Charles S. Hunter from West Sunbury to 7431 Race St., Pittsburgh (Allegheny Co.).

Fayette County: *New Members.*—John C. Dixon, Connellsville; George S. Hackett, Jr., Belle Vernon; Lee R. Herrington, New Salem; J. Pollard LaBarre, Uniontown; Arthur Keys Odbert, Brownsville; E. W. Steeves, Republic. *Removal.*—Charles J. Pflueger from Fairchance to 804 Michigan Ave., Kalamazoo, Mich.

Lancaster County: *Death.*—Thaddeus M. Rohrer (Jefferson Med. Coll., '81) of Quarryville, July 30, aged 64.

Mercer County: *Removal.*—J. T. Lafferty from Sandy Lake to 1155 Liberty Ave., Pittsburgh (Allegheny Co.).

Philadelphia County: *Removal.* — Annie E. Freese from Philadelphia to Memorial Hospital, 119 Belmont St., Worcester, Mass.

Schuylkill County: *New Member.*—Hamilton C. Wallace, Pottsville.

Somerset County: *New Member.*—William H. H. Schrock, Stoyestown. *Removal.*—Harry B. Smith from Acosta to Blairsville (Indiana Co.).

Susquehanna County: *Removal.*—John C. Wilson from Montrose to Hillside Home, Clarks Summit (Lackawanna Co.).

MILITARY ORTHOPEDIC SURGERY

The following is the full program for the Surgical Section, Thursday morning, during the Philadelphia Session, particulars of which could not be given when page 732 of the August Journal went to press:

No. 15.

The Foot of the American Soldier and Its Care.

J. T. Rugh (Philadelphia), Lieut.-Col., M. C., U. S. Army

Outline. Types and variations of normal feet: strong and weak feet; potential weakness and actual disability. Prophylaxis: the shoe problem; the foot problem; the far reaching benefits of the educational propaganda among the soldiers.

Discussion opened by Capt. William J. Merrill, M. C., U. S. Army, and Capt. Robert E. Davison, M. C., U. S. Army.

No. 16.

Wounds of the Joints; with Especial Reference to Splintage.

Robert B. Osgood (Boston), Lieut.-Col., M. C., U. S. Army.

Discussion opened by Major Edward Martin, M. C., U. S. Army.

No. 17.

Personal Impression of Reconstruction Work in England and France.

E. G. Brackett (Boston), Colonel, M. C., U. S. Army.

No. 18.

The Care of the Amputated in War.

David Silver (Pittsburgh), Lieut.-Col., M. C., U. S. Army.

Outline. (1) The amputation; modification of problem in War. (2) Care of the stump. (3) The supply of artificial limbs: necessity for an early and an elastic supply on an economic measure. (a) The artificial leg: three types, suited to the three phases of treatment. (1) The temporary peg leg. (2) The provisional artificial leg. (3) The permanent leg. (b) The artificial arm. (1) Temporary or improvised deviser. (2) The provisional arm. (3) The permanent appliance. (4) Training in the use of the appliance.

Discussion opened by Capt. Carl C. Yount, M. C., U. S. Army.

No. 19.

Moving Picture Films. (1) Selected Foot Film. (2) Splints for Transport. (3) Plaster Peg Leg.

R. Trustall Taylor (Baltimore), Major, M. C., U. S. Army.

STATE NEWS ITEMS

BABIES' WELFARE ASSOCIATION
Hotel Bellevue-Stratford, Philadelphia
September 23, 8: 30 p. m.

You are cordially invited to attend and to bring your friends

INFANT AND MATERNAL WELFARE MEETING

1. **"Birth Registration—A National Service," Neva R. Deardorff, Ph.D., American Red Cross, Washington, D. C.**
2. **"The Reduction of Maternal Mortality," Dorothy Reed Mendenhall, M.D., University of Wisconsin, Representing the Federal Children's Bureau, Washington, D. C.**
3. **"The Demands of War-Time Obstetrics," J. M. Baldy, M.D., Philadelphia.**

Dr. Joseph M. Asher, Philadelphia, has been elected Instructor in Surgery at Temple University.

Dr. David Nathan, Norristown, has been commissioned a captain in the Canadian Army Medical Corps.

Drs. Florence and Dorothy Childs, Philadelphia, are caring for French children at the hospital at Evian.

Dr. J. Torrance Rugh, Philadelphia, has been appointed professor of orthopedic surgery at Jefferson Medical College.

The Lycoming County Medical Society held an all-day outing meeting at Larrys Creek Fish and Game Club, August 9.

Dr. John W. Bruner, Bloomsburg, received a serious fracture of his wrist and other injuries in an automobile accident in July.

Dr. Edward H. Harris, Snow Shoe, is in the Bellefonte Hospital on account of chest injuries received in a recent automobile collision.

Typhoid Fever at Downington.—Thirty cases of typhoid fever were reported in Downington on August 15, with one death, a young lady aged 17.

Dr. Robert Newland Chase has resigned as superintendent of the Friends' Hospital in Frankfort after twenty-five years of service. He is succeeded by Dr. Albert C. Buckley, his former assistant and clinical medical director.

Drug Traffic.—Harry Levi, Eighth Street, Philadelphia, was arrested August 15, and held under $1,500 bail. The authorities have been after this man for two years, and found $2,000 worth of heroin and cocain in his possession.

The New Home for Nurses at the Philadelphia Hospital which will be ready for occupancy soon will have accommodations for 100 nurses. It will have cost $287,945 and will be one of the most completely equipped nurses' homes in the country.

New State Dispensaries Open.—Five additional state dispensaries have been opened at York, Lancaster, Williamsport, Wilkes-Barre and Altoona, for the treatment of venereal diseases. The dispensaries are in connection with the state tuberculosis service and the clinics are held in the same buildings.

Baby Farm Probe.—Three women and one man, all negroes, were arrested in South Fifteenth Street, Philadelphia, August 15, and held under $5,000 bail each. They were charged with kidnaping. The eight children found in the house were brought into court, all in a weakened and half-starved condition.

The Union County Medical Society at its annual meeting in July elected the following officers for the coming year: president, Dr. Harry R. Thornton, Lewisburg; vice president, Dr. Thomas C. Thornton, Lewisburg; secretary-treasurer, Dr. Amos V. Persing, Allenwood. Dr. Donald Guthrie of Sayre, Councilor for the District, was present and gave a very interesting talk.

The Lehigh Valley Medical Association held its semi-annual meeting at Delaware Water Gap, July 25. Dr. Ernest Laplace, Philadelphia, gave an address on Focal Infection. The following officers were elected: president, Dr. Noah W. Reichard, Bangor; vice president, Dr. F. A. Fetherolf, Allentown; secretary, Dr. Alex. Armstrong, White Haven; assistant secretary, Dr. R. P. Batchelor, Palmerton.

Dr. Frank C. Hammond, Philadelphia, has been appointed medical aid to Governor Brumbaugh, succeeding Dr. Edward P. Davis, resigned. Dr. Hammond has also been appointed chairman of the Pennsylvania Committee of the Council of National Defense, Medical Section, with headquarters at 515 City Hall, Philadelphia. Lieut. Chas. Scott Miller, formerly executive chairman of state committee, is now Adjutant of the Surgical School, Camp Greenleaf, Fort Oglethorpe, Ga.

Misbranding of Aqua Nova Vita.—On July 28, 1916, the United States attorney for the Eastern District of Pennsylvania, acting on a report by the Secretary of Agriculture, filed in the District Court of the United States for said district an information against the Aqua Nova Vita Co., a corporation, doing business at Easton, Pa., alleging shipment by said company, in violation of the Food and Drugs Act, as amended, on or about Dec. 7, 1914, from the State of Pennsylvania into the state of New York, of a quantity of an article labeled in part, "Aqua Nova Vita," which was misbranded. On March 11, 1918, the defendant company entered a plea of guilty to the information, and the court imposed a fine of $75.

Miss Milne Heads Army Nursing School.—Miss Caroline Milne, head of the Training School for Nurses at the Presbyterian Hospital for twenty-three years, is to take charge of the Army School of Nursing at Camp Dix, in connection with the present campaign for student nurses. Assisting her will be Miss Annie Wray, formerly superintendent of the Polyclinic Hospital and instructor of nurses at the Philadelphia General Hospital. Miss Wray is a graduate of the Presbyterian Hospital. She passed two years in New York as a district nurse with the Henry street settlement and for seven years was superintendent at the Altoona Hospital. Two years of the three-year course are spent in camp and one in the hospital. The schools offer a course that will lead to a diploma in nursing should the military hospitals continue during the full period, although if hostilities cease before three years credit for all branches of nursing completed will be given. Candidates must be between 21 and 35 years and should have a high school education or its equivalent. The first thirty students already enrolled will be received immediately for a three-year course.

LOW DEATH RATE.—New low records in combating preventable diseases were announced, August 14, by Dr. B. Franklin Royer, acting Commissioner of Health, in connection with a study of the causes of deaths in Pennsylvania in May, for which data have just been completed. There were but eighteen deaths from scarlet fever, the best previous for May having been twenty-four, in 1916, and twenty-eight last year, whereas in 1910 there were 115. Typhoid fever caused forty-nine deaths, which was only equaled by May of 1915. In May of 1906, soon after the late Commissioner Samuel G. Dixon took up the fight against typhoid, there were 342 deaths from this disease, falling to 237 in the following May, then to 129 in May, 1918, and steadily since. Last May there were fifty-seven deaths from typhoid. All told there were 10,219 deaths in Pennsylvania in May and 19,063 births, and in April and March pneumonia caused more deaths than any other single disease, the total being 1,331, with tuberculosis having 1,089, Bright's disease, 781; cancer, 552, and diphtheria 108. Eighty-six persons committed suicide, eighty-six were killed in the mines and ninety-six died of railway injuries.

REGULATIONS FOR THE CONTROL OF VENEREAL DISEASES, Adopted by the Advisory Board of the Department of Health of the Commonwealth of Pennsylvania on June 21, 1918. By authority of Act of April 27, 1905.

First: Syphilis, gonorrhea and chancroid are infectious diseases, highly dangerous to the public health and a special menace to the military organizations of the United States in the time of war, therefore, it is the duty of the State Department of Health and all public health authorities to adopt and enforce every precaution consistent with existing laws to prevent the spread of the infection therefrom.

Second: The Commissioner of Health of the Commonwealth of Pennsylvania is hereby authorized to prepare and furnish to the practicing physicians of the commonwealth circulars of instructions advising persons afflicted with any of the said diseases as to what precautions must be taken in order to prevent communication of the disease to others.

Third: It is hereby declared the duty of every physician when first attending any person afflicted with syphilis, gonorrhea or chancroid, to deliver to such person one of the circulars of information and instructions furnished him by the Commissioner of Health for the disease with which such person is afflicted.

Fourth: Any person suffering with syphilis, gonorrhea or chancroid to whom a circular of instructions has been delivered who shall wilfully fail, neglect or refuse to practice the precautions provided in said circular is hereby declared to be a menace to the public health, and the State Department of Health or any local Board or Department of Health is hereby authorized and directed to place such person under quarantine together with the premises on which he or she may have been found and to continue such quarantine until a certificate of recovery or non-infectiousness signed by a practicing physician is furnished for such case to the said health authorities, such quarantine to be established and maintained in the same manner that quarantine is established and maintained for other communicable diseases in accordance with the provisions of the Act of Assembly of May 28, 1915.

Fifth: The Commissioner of Health is hereby authorized and directed to post notices in all public toilets in the Commonwealth of Pennsylvania warning the public of the danger from venereal diseases and the necessity for prompt and proper treatment, such notices to be supplemented wherever possible by directions as to where and at what periods free treatment may be had at a genito-urinary dispensary of the Department of Health or other free dispensary.

Sixth: All persons are hereby notified and cautioned that the said notices provided for in the above regulations are placed in public toilets in accordance with a rule and regulation of the State Department of Health of the Commonwealth of Pennsylvania, and that any person or persons who shall mutilate, deface or destroy any such notice will be by so doing violating a rule and regulation of the State Department of Health, and will be subject to the penalties provided by the Act of Assembly of April 27, 1905, for such violation.

Advisory Board: Charles B. Penrose, M.D., Adolph Koenig, M.D., Lee Masterton, C.E., Edgar M. Green, M.D., JosephS. Neff, M.D., and T. E. Munce, V.M.D.
B. Franklin Royer, M.D., Acting Commissioner.

NOTE:—"Rules to be Observed in the Care and Management of Gonorrhea, Syphilis and Chancroid" will be furnished any physician in the Commonwealth (on receipt of request) by the Division of Supplies, State Department of Health, Harrisburg, Pa. Order by Form number, Form 972 for Gonorrhea, Form 973 for Syphilis, and Form 974 for Chancroid.

PENNSYLVANIA PHYSICIANS RECENTLY COMMISSIONED.—The following Pennsylvania physicians are reported to have received commissions in the Medical Reserve Corps of the Army or Navy since the list of members of the State Society was published in June with a star following those in the Service:

Adah—H. S. Brown.
Albion—C. O. Peters.
Allentown—E. M. Blew, W. J. Jones, J. C. Sharp.
Altoona—P. A. Bay, D. M. Rothrock.
Ardmore—J. C. McIver.
Aspinwall—W. G. Ross.
Avoca—L. C. Druffner.
Beaver—J. E. Purdy.
Bellefonte—M. W. Reed.
Bernville—C. E. Schlappich.
Bethlehem—A. Saska, P. F. Sterner.
Blairs Mills—J. M. Fleming.
Bowmansville—R. J. Henderson.
Boyertown—R. E. Leidy.
Braddock—F. L. Morrow.
Bradford—A. M. Bennardi.
Broughton—D. M. Davis.
Canonshurg—E. T. Hazlett.
Carrick—C. M. Thomas.
Castle Shannon—L. L. Brown.
Catasauqua—M. Kemp.
Chamhersburg—G. P. Asper, J. P. Maclay, F. G. Wright.
Chester—G. H. Cross, G. B. Sickle, J. W. Wood.
Claghorn—K. D. Curtis.
Clarks Summit—R. N. Mackey.
Coaldale—J. V. Burns.
Columhus—R. Reeser.
Conoquenessing—R. M. Christie.
Coudersport—J. H. Smith.
Crafton—J. S. Morgan, M. U. Stoneman.
Cresson—W. G. Turnbull.
Danville—A. M. Milligan.
Doylestown—J. R. Swartzlander.
Dudley—H. L. Dovey.
Easton—W. L. Coleman, W. F. Cope, P. R. Correll, S. A. Krehs, C. Rodriguez.
East Smithfield—W. R. Camphell.
Edgewood—G. B. Moran.
Edwardsville—D. R. Morgan.
Emlenton—A. W. Phillips.
Franklin—H. S. Stone.
Freeland—A. B. Hamilton, A. N. Redelin.
Glenside—J. R. Bibighaus.
Greenville—J. A. Doyle.
Halifax—F. C. Smith.
Harrisburg—G. A. Dapp, G. L. Laverty.
Heckscherville—J. J. Sweeney.
Hellam—J. W. Horne, Jr.
Hulmeville—R. R. Paxson.
Industry—S. H. Holland.
Ingram—J. S. Crawford.
Iselin—H. Nevins.
Jeannette—W. W. Miller, J. H. Watson.
Keffer—R. O. Gettemy.
Keisters—F. W. J. Allen.
Kingston—E. I. Wolfe, Jr.
Lancaster—H. C. Kinzer, S. W. Miller, C. C. Spangler, E. J. Stein.
Langhorne—T. A. Walter.
Leaman Place—W. J. Leaman.

Lebanon—J. Beattie.
Lewisburg—C. A. Gundy, H. R. Thornton.
Ligonier—J. H. Hamill.
Lock No. 4—A. S. Sickman.
McKeesport—A. Hunter, T. A. Steele.
McKees Rocks—J. R. Davis.
McVeytown—B. T. Steele.
Mahanoy City—G. S. Hensyl.
Markleton—G. W. Smeltz.
Manheim—D. W. Martin.
Mapleton Depot—M. D. Campbell.
Marcus Hook—G. F. Crothers.
Masontown—S. L. Johnson.
Meadville—C. K. Ferer, A. H. Gaston, H. C. Winslow.
Mercersburg—E. W. Bruce.
Meyersdale—B. Lichty.
Milroy—W. H. Kohler.
Minersville—T. J. McGurl.
Monessen—T. B. Herron.
Moon Run—J. W. Burkett.
Monroe City—H. H. Boyer.
Montgomery—P. H. Decker.
Muncy—P. A. Bay.
Nanty Glo—J. W. Barr.
Nesquehoning—R. S. Griffith.
New Castle—W. L. Campbell, D. C. Lindley.
New Kensington—D. M. Koontz.
Norristown—C. D. Roop.
Northumberland—C. W. Rice.
Peckville—R. H. Armstrong.

Philadelphia—M. A. Aaronson, W. D. Barry, W. A. Bennett, P. W. Best, B. Borow, J. P. Boyle, F. E. Bristol, T. J. Bunting, J. J. Cancelmo, I. J. Carp, C. E. Case, J. V. F. Clay, M. Clements, F. M. Cleveland, H. D. Conley, R M Cox, E. B. Craig, J. C. DaCosta, C. G. DeFoney, G. H. Denney, W. A. Doebele, G. Fetterolf, J. C. Foltz, F. Fraley, H. L. Goldburgh, L. R. Gorman, R. C. Gyles, C. R. Haig, Jr., F. G. Harrison, J. H. Hartwell, W. W. Hawke, J. L. Herman, G. W. A. Hess, A. P. Hitchens, S. D. Ingham, W. C. Johnson, L. L. Jones, M. H. Joseph, T. C. Kelly, L. A. Kennell, E. P. Kitchin, H. E. Knox, L. W. Kohn, R L. Langdon, R. A. Leopold, R. S. Leopold, P. Lipshutz, H. H. Lott, H. S. McCandlish, J. A. McGlinn, P. D. McMaster, J. A. Malondy, J. H. Mendel, H. M. Miller, J. W. Morgan, W. T. Morton, E. L. Mott, G. M. Neuburger, O. M. Ostrum, G. J. Parker, J. G. Penza, M. J. Pierson, M. L. Pratt, W G. Ramsey, R. S. Reeves, R. R. Ritzman, G. R. Roberts, N. Roberts, M. Rosen, G. G. Ross, A. R. Rozploch, R. D. Sample, H. J. Sangmeister, H. C. Sangree, C. Schabinger, R. A. Schless, C. F. Schmidt, E. A. Schumann, P. S. Seabold, H. K. Seelaus, J. D. Seiberling, C. M. Shaar, R. J. Sifre, J. A. Sharkey, W. B. Small, C. D. Smith, C. N Smith, C M. Smyth, C. D. Stull, J. E. Talley, N. H. Taylor, C. L. Thoen, P. R. Thomas, W. H. Thuium, L. S. Voorhees, F. O. Waage, L. W. Weber, C. F. West, H. M. Whiteway.

Phoenixville—S. A. Roulon.

Pittsburgh—C. M. Adams, J. H. W. Anderson, J. H. Barach, R. J. Behan, A. Bianco, J. C. Boggs, R. E. Brenneman, R. G. Burns, V. B. Callomon, J. R. Davis, J. O. Donaldson. K. Emmerling, T. Evans, Jr., R. J. Ford, S. J. Glass, Jr., W. H. Glynn, J. H. Goldstein, H. M. Holtz, J. J. Horwitz, W. P. Hughes, C. H. Ingram, A. F. Kamens, S H. Keller, J. S. Kelsey, Jr., D. I. Kirk, W. E. Kriess, C. C. Langley, L. Lasday, H. M. Lavelle, C. E. Lindeman, J. G. Linn, J. B. McConnaughy, M. D. Magoffin, A. R. Matheny, J. W. Mitchell, T. J. Moran, A. F. B. Morris, E. C. Niebaum, N. C. Ochsenhirt, J. R. Owens, H. B. Patterson, D G. Richey, J. P. Shaw, N. G. O. Shillito, H. P. Smith, C. A. Stillwagen, G. W. Stimson, M. E. Stover, F. L. Thigpen, H. C. Updegraff, F. B. Utley, G. S. Vagan, J. J. Weber, H. L. W. Wignall, D. Williams, A. H. Yarnall.

Quakertown—J. A. Weierbach.

Reading—R. M. Alexander, E. G. Hawman, I. J. Haws, F. W. Knoll, A. K. Wenner.

Reamstown—E. D. Russell.
Reedsville—B. R. Kohler.
Ridgway—W. C. Shaul.
Sayre—J. J. McNamara.

Scranton—A. E. Burke, J. P. Donahue, C. D. Miller, W. J. O'Malley, E. H. Rebhorn, W. S. Reese.

Selins Grove—R. W. Johnston.
Seminole—C. B. Lamp.
Shamokin—L. N. Gay, C. M. Malone.
Sharon—E. N. Hagin, H. E. Massy.
Sharpsburg—C. C. Stanton.
St. Marys—W. M. Black, J. K. Levan.
St. Peters—H. T. Smith.
St. Petersburg—A. J. Wood.
Steelton—J. L. Gallagher.
Stewartstown—E. M. Free.
Stoneboro—J. E. Ferringer.
Stroudsburg—W. R. Levering.
Sunbury—E. B. Cooper, H. W. Gass, J. W. Schoffstall.
Tarentum—F. L. Conwell.
Telford—R. Z. Cope, C. A. Paulus.
Turbotville—G. W. Muffley.
Uniontown—G. H. Griffin, G. H. Robinson, W. L. Sellers.
Waltersburg—J. R. Crothers.
Wapwallopen—C. L. Santee.
Warren—F. G. Schuler.

Washington—C. J. McCullough, J. B. McMurray, R. S. Parry, E. H. Perry, L. S. Sargent, A. E. Thompson.

Wattsburg—J. W. Fearn.
Weatherly—I. E. Freyman.
Wernersville—F. F. Massey.
West Alexander—J. M. Timmons.
West Chester—J. K. Patrick, W. Webb.
West Philadelphia—F. R. Humphreys.
Whiteley—A. R. Core.

Wilkes-Barre—W. S. Bell, J. R. Burns, C. C. Fox, L. J. Laux, R. F. Wivell.

Williamsburg—R. R. Whittaker.
Williamsport—J. P. Harley, A. C. Lamade.
Willock—H. S. Lake.
Wilmerding—W. R. Shoemaker.
York—R. L. Ellis, R. D. Hostetter.
Youngwood—A. H. Caven.

GENERAL NEWS ITEMS

Yellow Fever at Guatemala.—There are said to be forty deaths a day from yellow fever at Guatemala during present epidemic.

The American Academy of Ophthalmology and Oto-Laryngology held its twenty-third annual meeting in Denver, August 5 and 6.

The Red Cross recently sent seven tons of surgical dressings and five tons of special diet foods to the principal evacuation hospitals of the American Army.

The Johns Hopkins Unit, which was in training at Allentown, for several months and which left some time ago for overseas, has arrived in Italy after remaining a short time in France.

Drs. Philip Marvel and J. W. Hughes, Atlantic City, were recently appointed members of the New Jersey State Board of Medical Examiners, and Dr. John J. Mooney, Jersey City, was reappointed at same time.

Palestine Unit Reaches London.—The first all-Jewish medical unit composed of forty-three physicians, nurses, sanitarians, administrators and officers has reached London on its way to Palestine where it is to establish a public health service.

Child Welfare Work in Buffalo.—The city council of Buffalo, July 10, adopted a report authorizing an appropriation of $15,000 for child welfare work. The money will be used for the equipment of nutrition clinics, for the care of convalescent mothers and children, and for the prevention of stillbirths.

Sick and Wounded Soldiers.—During the week ended August 2, the number of sick and wounded landed in the United States from the American Expeditionary Forces was 159. These men were sent to the various Army hospitals, where facilities for treatment and physical reconstruction have been provided.

Dr. Henry K. Dunham, Cincinnati, roentgen specialist of the United States medical reserve corps, sustained a badly fractured leg and injuries to the head, July 26, near Frostburg, when his automobile upset while driving from Markleton Hospital, which the government is abandoning, en route to the hospital at Azalea, N. C.

Dual Control on Hospitals Barred.—The executive committee of the New Jersey Board of Charities and Correction has ruled that in the selection of chief executive officers for the state hospitals the managers shall confine their choice to those who have had technical medical training in the care of the insane, feeble-minded and epileptic.

Col. John M. T. Finney, chief surgical consultant of the American Expeditionary Forces, has recently arrived in Baltimore, bound for Washington on an important secret mission connected with his work overseas. The length of Colonel Finney's stay in this country is as yet undetermined, but it is probable that he will return to France as soon as he has completed his mission at Washington.

Dr. Luther H. Gulick, educator and author, died at his summer home in South Casco, Me., August 13, aged 52. Dr. Gulick was born in Honolulu and was educated at Oberlin College, Harvard and New York Universities. He was the originator and first secretary of the public schools athletic league of New York, which was the original branch of the organization, which has since spread to the majority of the larger cities of the United States.

DR. E. W. SANFORD of the Johns Hopkins University medical faculty, died July 23, in Centerville, from blood poisoning, produced by accidental inoculation while engaged in research work for the government. When he found that symptoms of poisoning were developing in himself as he had observed them in experiments on guinea-pigs and pigeons, he informed his parents and prepared for death. While ill a letter of praise for his work came to Dr. Sanford from Dean J. W. Williams of the medical school.

PHYSICAL EXAMINATIONS FOR NEW YORK CHILDREN.—The Health Committee of the Mayor's Committee on National Defense has begun the work of making physical examinations of all children under 5 years of age. More than 100 nurses, welfare and social workers and 300 physicians have volunteered to work at least two days a week without charge. During the week of July 15 about 3,000 children were examined. Dr. S. Josephine Baker, director of the bureau of child hygiene of the department of health, is directing the work. She states that there are more than 600,000 children to be examined.

THOMAS NEPTUNE GRAY, East Orange, N. J.; College of Physicians and Surgeons in the City of New York, 1879; aged 65; a Fellow of the American Medical Association; recording secretary of the Medical Society of New Jersey; president of the New Jersey Academy of Medicine, and vice president of the New Jersey Pediatric Society; one of the founders and once editor of the East Orange *Gazette;* a specialist in tuberculosis and diseases of children; chief of the bureau of tuberculosis of Newark, N. J.; city physician of East Orange for several years; died at his home, July 22, from cerebral hemorrhage.

ARMY DEATH RATE LOW.—Reports from Washington, August 14, are that the combined health reports from overseas forces and from companies and cantonments in this country show that the health records of American troops have never before been surpassed, so low is the death rate, Surgeon-General Gorgas announced this afternoon. The combined hospital death rate of forces here and overseas is 1.9 per 1,000 men. The death rate of men of the same age in civil life is 6.7. These figures are based on a total of 2,000,000 men. The death rate for the Mexican War was 100 per 1,000 men, Civil War 40 per 1,000 men, and the Spanish-American War 25 per 1,000 men.

MILITARY TRAINING AT COLLEGE FOR HIGH SCHOOL GRADUATES.—The Interior Department authorizes the following: Boys graduating from high school this year are urged by Dr. P. P. Claxton, United States Commissioner of Education, to go to college and avail themselves of the special college military training plan just adopted by the War Department. "Beginning with September, 1918," says Dr. Claxton, "military instruction, under officers and noncommissioned officers of the Army, will be provided in every institution of college grade enrolling for the instruction 100 or more able-bodied students over the age of 18, according to the War Department's announcement. The necessary military equipment will, so far as possible, be provided by the government."

PHYSICIANS ASKED TO ENROLL FOR ARMY AND NAVY.—The following statement is authorized by the War and Navy Departments: Orders issued by the War and Navy Departments on August 8 suspending further volunteering and the receipt of candidates for officers' training camps from civil life do not apply to the enrolment of physicians in the Medical Reserve Corps of the Army and in the reserve force of the Navy. It is the desire of both departments that the enrolment of physicians should continue as actively as before so that the needs of both services may be effectively met.

NEWTON D. BAKER,
Secretary of War,
JOSEPHUS DANIELS,
Secretary of the Navy.

EVAPORATED AND FRESH MILK USED IN THE ARMY.—During the first seven months of the present year the Army required 1,612,313 cases of evaporated milk. This number of cases is equivalent to 77,391,024 quarts of fresh milk, and it took approximately fifty milk concerns to furnish this amount. Evaporated milk is an important element entering into the soldier's ration. It is even more important in France than in this country, for there the rate of actual consumption by the American troops is four times the allowance specified in the Army ration. The Subsistence Division of the Quartermaster Corps exercises great care to see that the milk is in sterile condition and that it contains the required percentage of fats and solids when it reaches the soldiers. Every car of milk for the Army is inspected and chemical analysis made before being issued for consumption.

UNITED STATES AND CANADIAN SANITARIANS will convene at Chicago, October 14-17, under the auspices of the American Public Health Association and will consider such questions as which health officer should stay home and who should go to war? How is the nation bearing up under the war strain? What are the special war-time health menaces of the civil population, and what are we going to do about them? What headway are we making against the venereal diseases? Some of the military sanitarians who will address the meetings are Surgeon-General Gorgas, Col. Victor C. Vaughan and Major William H. Welch of the Army Medical Corps. The final program will appear in the *American Journal of Public Health,* appearing September 25. For further information write to A. W. Hedrich, Secretary, American Public Health Association, 1041 Boylston St., Boston, Mass.

CONTROL OF VENEREAL DISEASES.—The state board of health of Minnesota has formed a division of venereal diseases of which Dr. Henry M. Bracken, St. Paul, is secretary and executive officer; Dr. Charles E. Smith, Jr., St. Paul, assistant secretary; Dr. Harry G. Irvine, Minneapolis, director; Mr. L. W. Feezer, assistant director; Dr. Mabel S. Ulrich, Minneapolis, supervisor of social hygiene, and Dr. Charlotte G. Ashbrook, chief social worker. Funds for the administration of this division have been secured. The division will work on the following lines: The passage of laws or regulations and the enforcement of existing laws to make it possible adequately to control all classes of infected persons; the care and control of diseased patients, and the control of the prostitute. The division desires the cooperation of the medical profession in these important matters. Syphilis, gonorrhea and chancroid have been added to the list of reportable diseases, but the names and addresses of the patient need not be reported, providing the physician who is to assume the responsibility of the patient, renders the entire treatment. Each physician has been supplied with pamphlets regarding venereal disease for distribution. Druggists are to be required to report the names and addresses of all persons who apply to drug stores for treatment and the state board is planning to furnish full laboratory facilities both for the Wassermann test and for the examination for the gonococcus, to all physicians who desire them.

CORPS OF FLIGHT SURGEONS AND PHYSICAL DIRECTORS.—The War Department authorizes the following: For the care and conditioning of fliers in the Air Service the United States government is now appointing a corps of doctors and trainers large enough to equip each training field and camp for fliers, both here in the United States and in France, with a proper organization. The doctors will be known as flight surgeons and the trainers as physical directors. The medical branch of the Air Service is not alone confined to the selection of the flier but to his care and condition after he has been admitted to the service. It has become apparent that the flier is unlike other soldiers. In the Air Service he has become an intricate, highly sensitized piece of mechanism with troubles all his own. To keep his complex organism physically fit a special master mechanic had to be provided solely for him. The flight surgeon, therefore has been given freedom of independent initiative in all questions of fitness of the fliers. Subject to the approval of the commanding officer, he is expected to institute such measures as periods of rest, recreations, and temporary excuse from duty as may seem advisable. He takes sick calls of aviators; he visits such cases as may be in the hospital and consults with the attending surgeon regarding them. He makes the examination of candidates for aviation and lives in close touch with fliers. The physical directors are assistants to the flight surgeons and their duty is to supervise such recreation and physical training of the fliers as is considered necessary.

Venereal Disease Lecture to Women Graduates of Normal School.—"You as future teachers of New York State should become familiar with the venereal disease problem as a war measure, in order that you may be prepared to discuss this subject with the educational authorities and the various parent-teachers' associations in your locality." This statement was made by Sanitary Supervisor Wakeman in an address before the graduating class of 200 young women at the Geneseo Normal School. A full hour was devoted by Dr. Wakeman to discussing the nature, causation and ravages of venereal disease, besides pointing out how these conditions can in a measure be controlled by the State Department of Health, assisted largely by a properly educated public opinion. The time has now passed for limiting the discussion of these diseases to medical societies and social hygiene associations. Chancroid, gonorrhea and syphilis have now been listed by the Public Health Council with other communicable diseases and for that reason, if for no other, the public should be taught about the nature of these maladies the same as it is now informed about the nature, effects and dangers of scarlet fever, diphtheria and typhoid. In discussing afterwards certain points brought out in the address Dr. Wakeman stated that he was agreeably surprised to note how eager these young women were for information along these lines. The school authorities expressed the belief that these subjects should be freely discussed in normal schools, colleges and other educational institutions and that future curriculums should be so expanded that social hygiene would have a prominent and permanent place.

THE TRUTH ABOUT MEDICINES

NEW AND NONOFFICIAL REMEDIES

Since publication of New and Nonofficial Remedies, 1918, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedics":

Silver Proteinate-Heyden.—Said to be identical with protargol (See New and Nonofficial Remedies, 1918, p. 362). Silver proteinate-Heyden must conform with the tests, and have the properties described under protargol. The Heyden Chemical Works, New York (*Jour. A. M. A.*, Aug 17, 1918, p. 534).

Chloramine-T, Squibb.—A brand of chloramine-T which complies with the New and Nonofficial Remedies standards. For a description of the action, uses, dosage and chemical and physical properties of chloramine-T see New and Nonofficial Remedies, 1918, p. 156. E. R. Squibb and Sons, New York.

Chloramine-T Surgical Paste-Squibb.—It contains chloramine-T, 1 Gm., in 100 Gm. of a base composed approximately of sodium stearate, 15 per cent., and water, 85 per cent. E. R. Squibb and Sons New York.

Chloramine-T Tablets-Squibb, 4.6 Grains.—Each tablet contains chloramine-T, 4.6 grains. E. R. Squibb and Sons, New York.

Dichloramine-T, Squibb.—A brand of dichloramine-T which complies with the New and Nonofficial Remedies standards. For a description of the action, uses, dosage and chemical and physical properties, see New and Nonofficial Remedies, 1918, p. 157. E. R. Squibb and Sons, New York (*Jour. A. M. A.*, Aug. 31, 1918, p. 745).

PROPAGANDA FOR REFORM

The Cause of Hay-Fever.—In the regions of the United States west of the Rocky Mountains, hay-fever may be produced by an almost entirely different flora from that which causes it in the eastern states and in Europe. This emphasized the need for determining the exact species involved, in each case before treatment for immunity may be undertaken. It has been found that the type of spring hay-fever which is very troublesome in the Sacramento Valley is attributable to a walnut tree pollen (*Jour. A. M. A.*, Aug. 10, 1918, p. 469).

Eckman's Calcerbs.—This is put out by the same concern that exploits Eckman's Alterative, essentially a mixture of alcohol, calcium chlorid and cloves. Calcerbs is not sold openly as a cure for consumption, yet as an appeal to the consumptive the claims made are probably just as alluring and as dangerous as those made in the past for the "Alterative." The A. M. A. Chemical Laboratory reports that Calcerbs is sold in the form of tablets and that these contain about 20 per cent. calcium chlorid. They also contain calcium carbonate, an emodin-bearing laxative drug, such as aloes, sugar and flavoring material. That some physicians have recommended calcium salts in pulmonary tuberculosis, based on the unproved supposition that consumption is due to lime deficiency, is no excuse for a "patent medicine" concern putting out calcium chlorid under thinly veiled claims that will lead the public to infer that the preparations will cure consumption (*Jour. A. M. A.*, Aug. 10, 1918, p. 486).

BULLETIN EXCERPTS

MEDICAL MONTHLY, BUCKS

"Keep the home fires burning." Let every medical man who must or does stay at home in this world's crisis be more active and devoted to his profession than ever before. Do not allow a meeting of the brethren to pass without you being there; a suspicion of disloyalty to the great cause for which millions of lives have been and will be given will be attributed to you on account of your absence. The women of the land are doing their part fine; the man, not the woman, should lead in the advance. Be a patriot! Stand by your profession! Stand by your country as never before!

About a year ago Dr. Jump said at a meeting of doctors: "It will not be long before a doctor, physically and mentally fit, will be ashamed to be seen on the street in a civilian suit." A doctor said to me a few days ago: "I have offered myself to my country and have been examined for the Medical

Reserve Corps. I may not be accepted, but that is for my country to decide. It will be a great sacrifice for my family to bear, financially and other ways, but nearly all of the men I respect have gone, it makes me feel like a slacker, I can't stand it any longer, and we have decided to make the offer." Another doctor who has gone told me: "I was ashamed to be seen on the street, the world pointing to me as a slacker." Such thoughts and impulses are the signs and symbols of loyalty and manliness. Reader, did they ever come to you?

THE BULLETIN, CLEARFIELD

Get Ready for the Best Outing We Ever Attended

The Annual Outing of the Clearfield County Medical Society will be held at the Country Club, Clearfield, Wednesday, Aug. 14, 1918.

This will as usual be a basket affair and the good wife of the doctor is hereby warned to begin to prepare for the great festivity.

Kill your big fat rooster,
And become a roaring booster
For the big time that comes but once a year;
Bid the doctor oil his flivver
For you'll miss it niver-niver
'Cause the weather man assures us 'twill be clear.

The kiddies will make a racket
And old Dock'll sweat his jacket
At the royal game of ball which he will play;
He'll be spry as any kitten
While he wears the baseman's mitten,
Though he has to lay abed the whole next day.

There'll be no pop bottles poppin'
For to make the kids feel rotten
And to cause dear Ma her blessed sleep to lose;
But dear Lemmo will replace it
As the committee did efface it,
Nor will Daddy get his stomach full of booze.

One good wife suggested that in keeping with the times, we make the menu as simple as possible, let it be good, for the Lord knows the doctor loves good things, but if the present state of the weather continues as it is mighty likely to do, don't let us have our wives slave all the day before and all the day of the picnic in order to give us a chance to gormandize for this one day, but let them get up a simple, good menu which will mean a minimum of work for them on that day as well as on the preceding day and let it be their picnic as well as ours.

READ YE LADIES AND ACT ACCORDINGLY

The committee will furnish butter, lemons, paper napkins, coffee, cream, ice cream and the water, but on account of the stringency in the sugar market it will be necessary for each one to bring a small package of sugar so that there will be a supply for the making of lemonade, the pop being tabooed this year for the good of the youngsters as well as for the mothers. It will require considerable lemonade to keep the kiddies from missing the pop.

The Society owns two good balls and two bats, but it would be well for each player to bring with him a good mitt to protect his fingers mitt. Now get your car ready so that it will not be necessary to be hauled onto the grounds behind one of those rattling little Fords for that is so humiliating. If you don't happen to have a car come in your Ford for they often come in handy to haul the regular cars in with and the club has decreed that Fords will be admitted to the grounds provided they are muzzled so that they cannot root up the golf links.

BUREAU OF MEDICAL EDUCATION AND LICENSURE

MEMBERS BY APPOINTMENT

John M. Baldy, Pres., 2219 DeLancey St., Philadelphia.
William M. Hillegas, Philadelphia.
Irvin D. Metzger, Pittsburgh.
Calvin L. Johnstonbaugh, Bethlehem.
Adolph Koenig, Pittsburgh.

Members Ex-Officio.

Nathan C. Schaeffer, Sec., Dept. of Pub. Inst., Harrisburg.
B. Franklin Royer, Harrisburg.

LIST OF QUESTIONS SUBMITTED BY THE BUREAU OF MEDICAL EDUCATION AT THE JULY, 1918, EXAMINATIONS

MEDICAL AND SURGICAL

PHYSIOLOGY, PATHOLOGY AND BACTERIOLOGY

1. Outline briefly the postmortem findings following a fatal disease in some particular case under your observation.
2. Describe bone necrosis; also, the method of repair following a fracture.
3. Name the ductless glands, giving the function of each.
4. Give the predisposing causes and the pathology (a) of aneurysm; (b) of varicose veins.
5. Explain the alteration in function (a) in cyanosis; (b) in glaucoma.
6. What is meant by (a) upper neuron? (b) Lower neuron? What type of paralysis is characteristic of each?
7. What is the physiologico-pathological significance of Argyll Robertson pupil? hunch-back? diplopia? nystagmus?
8. By what feature in the investigation are these bacteria identified: gonococci? Klebs-Loeffler bacilli? typhoid bacilli? streptococci? spirochete of syphilis?
9. Name five antiseptics, giving their strength for use and relative value in service.
10. Describe briefly the types of kidney lesions in which the functional capacity of the organ is dangerously impaired. Indicate the findings in urinalysis of each type.

DIAGNOSIS, SYMPTOMATOLOGY, TOXICOLOGY, MEDICAL JURISPRUDENCE

1. What are the symptoms of typhoid fever (a) in the first week, (b) in the second week? Differentiate typhoid fever from some one confusing disease.
2. Differentiate measles from scarlet fever and name the principal complications of measles.
3. What is meant by loss of compensation in diseases of the heart? What are its main symptoms?
4. What is the significance of bleeding from the mouth? How would you determine its possible sources and causes in three varieties of blood spitting?
5. Differentiate iritis from acute inflammatory glaucoma.
6. Give the symptoms and physical signs of lobar pneumonia and differentiate it from subacute pleurisy with effusion.
7. What are the symptoms of erysipelas? Differentiate it (a) from erythema simplex and (b) from acute eczema.
8. If poison is found in the stomach contents, what other evidence is necessary to sustain satisfactory proof of death by poisoning?
9. What are the signs of death (a) by strangulation? (b) by drowning? (c) by fractured skull? (d) by internal hemorrhage?
10. What are the early symptoms of acute poliomyelitis before paralysis? About when does paralysis occur?

OBSTETRICS AND GYNECOLOGY—PHYSIOLOGICAL CHEMISTRY

1. Should a woman with a deformed pelvis (early in pregnancy) engage your services, name the three most important methods by which you would aim to secure her a living child? In each instance name the limits of measurement of the conjugate vera.

2. Given a pregnant woman (within the first three months) of doubtful intra-uterine or extra-uterine location, describe in detail how you would determine the correct diagnosis?

3. During the birth of an infant what dangers threaten it? Name the three most important dangers and discuss their prevention.

4. How would you deduce the presence of uterine cancer: (a) early? (b) late? Describe carefully the difference. Name the most important method of treatment.

5. Name the distinguishing points of difference between uncomplicated retro-displacement of the non-gravid womb, a small uncomplicated pelvic tumor and fecal content of the lower bowel.

6. When is the induction of premature labor justifiable? In any three cases in which you would consider the advisability of performing any other operation, explain in detail why you would prefer them to premature labor.

7. If, at the third month, a primipara should engage you to care for her through the period of gestation and labor, give in detail your care of the case, including measurements and tests.

8. What symptoms would lead you to the apprehension of an oncoming attack of eclampsia before the convulsions set in? What measures would you take to prevent the threatened attack?

9. Discuss the thyroid gland from the chemical and therapeutic standpoint.

10. (a) What are the most prominent organic constituents of commercial meat extracts? (b) What is the nutritional value of such extracts?

ANATOMY AND SURGERY

1. What are the early symptoms of hip joint disease? What is the anatomical explanation of each of these symptoms?

2. State the avenues and possible points of metastasis of malignant growth of the breast. On what symptoms may an early diagnosis of cancer of the breast be based?

3. State the varieties and causes of hemorrhoids, together with the complicating surgical conditions which may follow their presence. Mention two operations for their cure.

4. Given a severe scalp wound, on what would you base your opinion as to the safety of immediate closure of the wound?

5. What conditions would demand a circumcision (a) in the child? (b) in the adult? Describe the operation.

6. State in detail the conditions necessary to be present which would warrant the amputation of an extremity. State the structures severed in an amputation through the middle of the arm.

7. How is Colles' fracture produced? What displacements occur and what is their anatomical explanation? State the method of reduction of the fracture.

8. Describe the principles involved in the Carrel-Dakin treatment of wounds. Give a detailed description of the application of the method. Point out the essential differences between this method and the dichloramin-T method.

9. Detail the possible traumatisms produced in a sprain of the ankle. Outline the principles involved in its treatment and the method of securing the result.

10. State the condition caused by gonorrhea that may require surgical intervention (a) in the male, (b) in the female. State what operation would be indicated in each instance.

PRACTICE—MATERIA MEDICA AND THERAPEUTICS—HYGIENE AND PREVENTIVE MEDICINE

1. Name the principal alkaloids in opium. How would you treat a patient addicted to the use of opium?

2. How would you treat: (a) Diarrhea of cholera infantum? (b) Diarrhea of an acute gastro-enteritis? (c) Diarrhea of tubercular disease of the intestinal canal?

3. What medication might be employed in the treatment of chronic digestive inadequacy? What articles of diet would be indicated and what ones contra-indicated, especially where fermentative action is pronounced and symptoms of auto-intoxication are present?

4. Outline the treatment of (a) chorea; (b) locomotor ataxia.

5. Name two conditions under which each of the following named remedies might be used and give the rationale of their administration: (a) Oleum terebinthinae, (b) oleum tiglii, (c) camphora, (d) atropin sulphate, (e) argenti nitras.

6. Outline the treatment of pernicious anemia and of simple anemia.

7. Discuss the subject of the treatment of pain as it may present itself in the course of any three diseases of your own selection.

8. Discuss the subject of the prevention and treatment of syphilis.

9. Give the average and the maximum dose of the following named drugs: (a) Hyoscyamin hydrobromid, (b) corrosive mercuric-chlorid, (c) santonin, (d) tincture of digitalis, (e) tincture of aconite, (f) strophanthin, (g) fluidextract of ergot, (h) caffein, (i) amyl nitrate, (j) dilute hydrocyanic acid.

10. Discuss the therapeutic application of sodium bicarbonate, of sodium chlorid and of sodium benzoate.

MASSAGE AND ALLIED BRANCHES

ANATOMY AND PHYSIOLOGY

1. (a) Describe the anatomy of the skin; (b) state its functions.

2. Describe the circulation of the blood beginning with the skin until it again returns to the skin.

3. Describe (a) the anatomy of the kidney; (b) explain its functions and its method of performing them.

4. Describe (a) the anatomy of the liver; (b) its functions.

5. Define (a) tendon; (b) ligament; (c) bursa; (d) synovial membrane. Cite an example of each.

6. (a) What do you understand by "epithelial cells"? (b) Cite an example. (c) What is their function?

7. (a) State the nine regions of the abdomen; (b) name the organs contained in each region.

8. (a) What do you understand by "elimination"? (b) What organs are concerned in elimination? Name the product of each organ.

9. (a) Name four ductless glands of the body; (b) discuss the function of each.

10. (a) Name the columns of the spinal cord; (b) indicate the more important functions of each.

PRACTICE, HYGIENE AND PATHOLOGY

1. What conditions in a joint would contra-indicate your method of treatment? In conditions of the joint which would be applicable for your treatment, before beginning any manipulation of the joint, what precautions would you take?

2. In a tardy restoration of complete function following a fracture of one of the long bones, discuss in detail the treatment of the case.

3. Name and describe the various forms of baths employed in hydrotherapy. Give a general outline of the conditions as regards the patients that would guide you in the employment of each.

4. Detail the treatment suitable for the relief of constipation, stating the purposes of each manipulation. Indicate any dangers which might obtain in case a mistake in diagnosis had been made and the case proved to be one of true bowel obstruction.

5. What dangers may follow an abrasion of the skin? Under what circumstances might this occur in the course of your manipulation? In case such abrasion should occur, what precautions should be taken?

6. Discuss fully under what conditions abdominal manipulation may be (a) beneficial; (b) harmful.

7. State under what conditions you would use (a) hot, (b) cold applications; give in detail the reasons together with actions of means employed in each instance.

8. Detail the manner in which the circulation is influenced by manipulation methods.

9. In paralysis of a limb (a) what pathological conditions may be present? (b) In the case of each lesion, how would you treat the limb?

10. What is obesity? How would you treat it? Explain just what the method of treatment is expected to accomplish and how.

DRUGLESS THERAPY

ANATOMY AND PHYSIOLOGY

1. (a) Describe the anatomy of the skin; (b) state its functions.

2. Describe the circulation of the blood beginning with the skin until it has again returned to the skin.

3. (a) Describe the anatomy of the kidney; (b) explain its functions and its method of performing them.

4. Describe (a) the anatomy of the liver; (b) its functions.

5. (a) Explain the physiological circuit essential to a reflex action; (b) give an example of reflex action.

6. (a) State the nine regions of the abdomen; (b) name the organs contained in each region.

7. (a) Name four ductless glands of the body; (b) discuss the function of each.

8. (a) Name the various types of joints; (b) describe in detail any one of the large joints of the body.

9. (a) Name the columns of the spinal cord; (b) indicate the more important functions of each.

10. (a) What do you understand by elimination? (b) What organs are concerned in elimination? (c) Name the product of each organ.

SYMPTOMATOLOGY, DIAGNOSIS, HYGIENE, PRACTICE

1. (a) State the difference between a sprain and a fracture; (b) differentiate the symptoms.

2. Differentiate the presence of free fluid in the abdomen from intra-abdominal fluid contained in a sac.

3. (a) Describe the early signs of cancer of the breast; (b) differentiate cancer of the breast from a benign tumor of the same organ.

4. Give in detail the physiological effects of heat and cold on the circulation in man.

5. Discuss the early diagnostic symptoms of tubercular disease of the hip joint.

6. Differentiate chronic constipation from true bowel obstruction.

7. State the essential points of difference between (a) acute appendicitis; (b) acute indigestion; (c) typhoid fever.

8. What abnormal conditions are suggested by (a) an area of anesthesia and by (b) an area of hyperesthesia; in one arm or hand?

9. What diseases would you suspect and what investigations would you make in a case of dropsy of the legs?

10. Differentiate intercostal neuralgia from pleurisy.

PATHOLOGY

1. What laboratory equipment in connection with your office would you consider essential to successful practice?

2. What peculiar disease conditions may result from abnormal tonsils?

3. Name two bacilli that are apt to affect the respiratory tract. Describe the action of each.

4. What organic changes are found in chronic interstitial nephritis? What are its urinary characteristics?

5. How is the heat of the body produced? How regulated? What is the pathological significance of a continuous increase above the normal?

6. Describe the gross lesion (a) in tabes dorsalis, (b) in apoplexy.

7. Name the signs and symptoms of each of the stages of syphilis. At what time is each apt to appear?

8. What signs would make you suspect inherited syphilis in a child?

9. Outline the various tests which aid in diagnosing suspected tuberculosis.

10. Name five bacteria, telling in what particular way each may be identified.

CHIROPODY

ANATOMY AND PHYSIOLOGY

1. Describe the anatomy of the skin; (b) state its functions.

2. Describe the circulation of the blood beginning with the skin of the foot till it again returns to the foot.

3. (a) Describe the anatomy of the kidney; (b) explain its functions and its method of performing them.

4. Describe (a) the anatomy of the liver; (b) its functions.

5. (a) Name the muscles of the foot; (b) describe the action of each.

6. Define: (a) tendon; (b) ligament; (c) bursa; (d) synovial membrane. Cite an example of each.

7. How would you recognize flat-foot? By what is it caused?

8. (a) Name the joint in which bunion most usually occurs. (b) Describe in detail the structure of the joint.

9. (a) What do you understand by "epithelial cells"? (b) What is their function? (c) Cite an example.

10. (a) State the general divisions of the nervous system; (b) describe the functions of each.

PRACTICE, HYGIENE AND PATHOLOGY

1. (a) What is a "trench-foot"? (b) Describe its pathology; (c) its treatment.

2. (a) What is a bunion? (b) Describe its pathology. (c) How would you treat it?

3. (a) What is the cause of offensive sweating of the foot? (b) How would you treat it?

4. State (a) conditions in which you might employ a caustic. (b) What caustic agent would you use? (c) What dangers might result from the improper use of caustics?

5. Describe in detail two methods for the removal of a heloma, giving the pre- and post-operative treatment.

6. The presence of what symptoms or conditions in the foot or in the general condition of the patient would lead you to regard the case as one that should not be treated by you at that time?

7. (a) What causes fissures between the toes and how should they be treated? (b) What causes blisters on the heel and on the center of the sole of the foot and how would you treat each?

8. How would you treat any part of the foot affected by inflammation or infection, prior to doing an operation?

9. State the pathology of (a) a hard corn; (b) a soft corn; (c) an ingrown toe-nail; (d) a flat-foot.

10. (a) Enumerate the conditions of the foot that may arise from badly fitted shoes. (b) State in detail in each instance the method of prevention and the explanation.

BOOKS RECEIVED

Books received are acknowledged in this column, and such acknowledgement must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

Principles and Practice of Infant Feeding. By Julius H. Hess, M.D., Major, M. R. C., U. S. Army, Active Service; Professor and Head of the Department of Pediatrics, University of Illinois College of Medicine; Chief of Pediatric Staff, Cook County Hospital; Attending Pediatrician to Cook County, Michael Reese and Englewood Hospitals, Chicago. Illustrated. Philadelphia: F. A. Davis Company. Price, $2.00 net.

The Proteomorphic Theory and the New Medicine. An Introduction to Proteal Therapy. By Henry Smith Williams, B.Sc., M.D., LL.D., Member of the National Committee for Mental Hygiene, and of the Hygiene Reference Board of the Life Extension Institute; Successively Pathologist to the Iowa State Hospital at Independence; Assistant Physician to the Blackwell's Island and Bloomingdale Asylums, and Medical Superintendent of the New York Infant Asylum and Randall's Island Hospitals, New York City. New York: The Goodhue Company, 104 East Fortieth Street.

The Science and Art of Proteal Therapy. By Henry Smith Williams, B.Sc., M.D., LL.D. A chapter excerpted from Dr. Williams' new book entitled "The Proteomorphic Theory and the New Medicine: An Introduction to Proteal Therapy"; together with the Foreword from the same work. Printed from the original plates, and issued as a Monograph for the convenience of the medical profession. Any regularly qualified member of the medical profession may secure a copy of the present Monograph, free of charge, by addressing The Goodhue Company, 104 East Fortieth Street, New York City.

BOOK REVIEWS

"FEMALE WEAKNESS CURES." Prepared and issued by the Propaganda Department of *The Journal of the American Medical Association*, 535 N. Dearborn St., Chicago. Price, 15 cents.

Henry Sewill in "Vanity Fair" says: "Among the victims to quackery of every sort women far outnumber men. They are always more trustful and, as a rule, find it more difficult, especially when suffering, to believe that any one can be base enough to abuse their confidence, much less to take advantage of their helplessness in order to plunder and injure them." The American people are prone to be misled by money interests aided by newspaper boosting and it does not matter much whether it be German propaganda, patent medicine or alcoholic drinks. It is well that the public should have the facts regarding the nostrum evil and quackery.

THE COMPOSITION OF CERTAIN PATENT AND PROPRIETARY MEDICINES. Compiled by John Phillips Street, Major, Sanitary Corps, N. A., late Chemist in charge of Analytical Laboratory, Connecticut Agriculture Experiment Station. 274 pages; more than 2500 remedies; over 3100 analyses. American Medical Association, 535 North Dearborn Street, Chicago. Cloth, $1.25 postpaid.

During the past few years hundreds of "patent" and proprietary medicines have been analyzed with the object of giving the public information that would be of vital interest to it. This work has been done by federal and state officials and especially by the chemists of the American Medical Association. The information has been scattered through many publications and, for this reason, has not been easily accessible either to the public or to officials. The purpose of Mr. Street's compilation is to remedy this difficulty, in a measure, by bringing together in one work an accurate record of published analyses. The book contains analyses (one or more) of over 2,500 proprietary medicines, including the most widely used and extensively advertised products offered to the American public. The analyses are published without comment and without prejudice and the compact form in which they are presented should prove of great usefulness to the physician, the pharmacist, the inspection official and the intelligent layman.

THE MEDICAL CLINICS OF NORTH AMERICA. Volume I, Number 6 (Southern Number, May, 1918). Octavo: 224 pages, 35 illustrations. Philadelphia: W. B. Saunders Company. Published bimonthly. Price, per year, paper, $10.00; cloth, $14.00.

An enumeration of the subjects discussed in the present number of this publication will suffice to indicate their interest and value. Dr. J. B. McElroy of Memphis deals with the Nephropathies. Dr. George S. Bell undertakes a Comparison of the Essential Pneumonias from the Standpoint of Their Clinical Significance. He also considers Typhoid Fever Complicated with Purulent Cerebrospinal Typhoidal Meningitis and No Intestinal Lesions. Dr. Charles L. Minor of Asheville presents the subject of Artificial Pneumothorax (Forlanini): Its Application to the Arrest or Cure of Pulmonary Tuberculosis. Dr. James S. McLester of Birmingham discusses Certain Measures to Prevent Dissemination of Disease. Dr. Bryce W. Fontaine of Memphis reports a Case of Acrondroplasia and considers Tuberculosis of the Peritoneum and Syphilitic Fever. Dr. C. C. Bass of New Orleans presents a study of Malaria. Dr. Lawrence T. Royster of Norfolk discusses the Premature Infant. Dr. J. Ross Snyder of Birmingham reports the results of a Study of Ten Pellagrins in Two Families Living in the Same Neighborhood. Dr. J. Heyward Gibbes of Columbia, S. C., discusses Hodgkin's Disease and Reflex Gastrospasm. Dr. William H. Deaderick of Hot Springs, Ark., describes the Treatment of Malaria. Dr. Robert Wilson, Jr., of Charleston reports a Case of Gonococcemia. Dr. James E. Paullin of Atlanta discusses Myocardial Infarct Following Coronary Sclerosis. Dr. John P. Munroe of Charlotte, N. C., considers Severe Headaches. E.

SOCIETIES

PITTSBURGH ACADEMY OF MEDICINE

Meeting of April 23, 1918

A Case of Filariasis Treated with Salvarsan. Dr. J. M. Thorne: Miss M. W., aged 48, single, a missionary. About ten years ago she went to Porto Rico, where she became infected with filaria. The first symptoms appeared about two and a half years ago, when she had lymphangitis starting in right thigh and affecting whole lower extremity. She had swelling and discoloration over the main lymphatic tracts. Swelling remained permanently in many spots, particularly about ankles. Later, left lower extremity became affected. There have since been a number of fresh invasions, each one accompanied by a chill and fever, an area of swelling and local tenderness. The induration continues in the spots, after the acute symptoms subside. Local tenderness is always present on deep pressure and is increased by exercise. Pain is brought on by walking. Her legs now present the appearance of a moderate case of elephantiasis.

The diagnosis was first made by Dr. Carbonell, medical director of the Military Hospital at San Juan, Porto Rico. The patient was also under the care of Dr. Baily K. Ashford and Dr. Guiteras in San Juan. Later she was in the Presbyterian Hospital in New York under the care of Drs. Bovaird and Riley. Last summer she came to Pittsburgh and was seen by Drs. J. F. Edwards, J. A. Lichty, W. W. Jones and E. W. ZurHorst. All agreed in the diagnosis except Dr. Ashford, who withheld the diagnosis till the filaria could be found in the blood.

Dr. ZurHorst continued the hypodermic injections of fibrolysin which had been instituted by Dr. Carbonell in Porto Rico.

A year later she was in much the same condition as before with a few fresh invasions. At this time I found that salvarsan was suggested by Strumpel. In a recent letter from Dr. Carbonell he states that he is now using neosalvarsan for filariasis. On the strength of these authorities I administered three doses of neoarsphenamin, 0.6 grains each, intravenously, one week apart. Twenty-four hours after first dose, patient was free from pain and tenderness in affected areas, and has remained so.

The Sciaticas: The Radicular vs. the Neuritic Types. Dr. E. E. Mayer: Pain in the legs, naturally, may be a symptom of many and most varied conditions. Indiscriminate pain is, therefore, not the disease sciatica. It is always necessary to eliminate the pains due to tabes by examination of the reflexes and other well-known signs, a possible diabetic origin by an examination of the urine and the presence of gangrene. Sarcoma or chronic osteomyelitis or spondylitis or sacro-iliac disease are diagnosed by a radiograph examination, palpation and testing the motion of the pelvis. Likewise the pains of flat feet, of metatarsalgia, gout and varicose veins must be eliminated and we must distinguish the localized neuralgias of the anterior crural nerve (femoral). In other words, sciatica must not only be pain, but must be pain localized in the great sciatic nerve and due to primary irritation, compression or inflammation of this nerve.

It was not until this century, about 1903, that Dejerine first wrote concerning the radicular type of sciatica and showed its frequent relationship with syphilis of the nervous system. We have then three different types of sciatica, the peripheral, the truncal and the radicular. Other writers speak of the peripheral, including in it the truncal, the radicular and a central type. The main point which I wish to bring out is the frequency of the radicular type and the necessity of distinguishing it from an ordinary neuralgia. Injection Treatment: (1) Nerve sheath injections with normal saline, artificial serum of 2 per cent. cocain solution. (2) Subarachnoid injections into the lumbosacral cord. (3) Epidural injections. This method in intractable cases is always advisable. The injection is made in the coccygeal foramen, the needle being introduced at an angle of 20 degrees, the opening being found by running the finger down the sacrum until an excavation is found, which is the location of the opening. It is found about 3 inches from the tip of the coccyx. After the sacrococcygeal ligament is pierced, the needle is tilted in the direction of the canal and the fluid rapidly injected. (4) Sicard's method of directly injecting the nerve is the most advisable in the intractable neuralgic types. A line is drawn between the great trochanter and the ischiatic tuberosity. One inch external to the junction of the internal third and the external two thirds, the needle is introduced and the nerve found at a depth of about 2½ to 3 inches. The nerve is reached with the onset of intense pain down the leg. From 20 to 100 c.c. of fluid is then injected.

Dr. Henninger, in discussion: Recently orthopedic surgeons have eliminated sciatica as a definite disease. Goldthwaite and Gillette both claim that there is no such disease. In those patients with luetic taint emphasis should be laid on antisyphilitic treatment.

Report of a Case of Retropharyngeal Abscess with Complications in an Infant Three Months Old. Dr. H. McCready: Case admitted to Eye and Ear Hospital, March 9, 1918, on account of severe dyspnea and difficulty in swallowing. Mother noticed slight difficulty in swallowing and occasionally regurgitation of milk about one week previous to admission. Slight fever. Dyspnea and regurgitation gradually grew worse for the next seven days. No history of trauma.

On physical examination, chest findings practically negative. Inspection of pharynx showed a large protruding mass from posterior pharyngeal wall. On palpation this mass was found to extend quite high up into nasopharynx and low down in esophagus. Cellulitis was pronounced on right side of neck. Diagnosis of retropharyngeal abscess was made. Child was placed with head low and the abscess incised. As soon as incision was made the child was held up by the heels and the pus flowed freely from nose and mouth. The pharyngeal wound was enlarged further by means of forceps. During the next half hour the baby's breathing improved somewhat and he was able to take the breast without much difficulty.

Six hours after evacuation of abscess I received a hurry up call from the hospital. When I arrived at the hospital I found the baby quite cyanosed again, due partly to pus and secretion from the abscess, but mostly from irritation of the larynx. Oxygen was administered. On account of dyspnea I decided to do an intubation but on attempting to insert the tube I found that the smallest (a year-old size) tube we had was too large for the 3-months-old baby. A tracheotomy was then indicated. This was performed with the aid of oxygen. The tracheotomy was rendered difficult on account of the urgent dyspnea, shortness of the child's neck and the very small caliber of the trachea. After the trachea was opened we again found our 1-year-old tracheotomy tube was really too large for the child's trachea. The inner tube was used alone. The child's breathing improved immediately after the trachea was opened. Next day the child developed a severe trachitis and bronchitis. During the next week a special day and a night nurse were kept busy wiping the secretion from the mouth of tube and cleaning the inner cannula.

By the end of the second week the pus had entirely disappeared from the retropharyngeal cavity. The seventeenth day the tracheotomy tube was removed, and the child cried most of the night but had no trouble with its breathing. Examination showed that right ear drum had ruptured and was discharging. This condition did not give the patient any further trouble, except of course it continued to discharge. Four days after tracheotomy tube was removed the child was discharged from hospital in excellent condition.

Two days later the father reported that the baby was again suffering from urgent dyspnea. I ordered it brought back to hospital at once. Examination of pharynx showed it free from any mass or obstruction. External tracheal neck wound was healed solid. I decided it must be some obstruction within the trachea. By the use of the Jackson direct laryngoscope and bronchoscope I could see a mass hanging down from the tracheotomy scar. This mass obstructed about half the lumen of the trachea. It had a grayish white appearance. With long seizing forceps I removed the obstruction but just as I was withdrawing it from the larynx it dropped from the forceps and immediately passed down the esophagus. The child's dyspnea was relieved immediately. In two days the child was again discharged from the hospital. That was on April 3, 1918. Since that time he has been entirely free from symptoms.

Infectious Diarrhea of Infancy. Dr. F. T. Billings: There is undoubtedly a clear-cut division, clinically, between the ordinary digestive disturbances of infancy and those due to infection by various micro-organisms. In a large number of acute gastro-intestinal diseases bacteria are the primary cause of the disturbances. Such cases may be grouped under the term of infectious diarrhea. We are dealing with an acute infection as surely as we are dealing with one in pneumonia or typhoid.

It is fully recognized that many varieties and strains of micro-organisms are normally inhabitants of the gastro-intestinal tract. These generally do not cause disturbance, but may be the extraneous or unrecognizable causes of the introduction of foreign bacteria, which produce disturbances and symptoms grouped together under the term of "infectious diarrhea." There have been generally accepted three theories concerning the etiology of intestinal disturbances in infants: First, because most of the cases occur in the hot weather high temperature is believed causative; second, improper feeding, and this has expanded to include ptomains and the abnormal breakdown which food itself may undergo in the intestinal tract, and third, the most recently developed microbic theory.

From this point two divisions may be made of these cases: (a) Those whose causative factors are the gas bacillus which has recently been recognized as important in the intestinal derangement of children; (b) dysentery group. Shiga and Flexner: Those bacilli in the first division flourish on a carbohydrate diet and if given this food will continue to propagate. In the second group, the dysentery bacilli, Kendall has pointed out that when grown in a medium with an excess of carbohydrates they use only a sufficient quantity of proteid to furnish their requirements.

We now come to the third group of diarrhea which, although not classified as infectious, still is closely related to bacterial activity. The so-called acute fermental diarrhea is of this type of disturbance, commonly designated as "summer complaint." These cases seem to come in series. The improvement of the milk supply and its sterilization do not appear to influence the occurrence of this type. Many observers believe that a high humidity, with overcrowding and poor hygienic surroundings directly predispose to the disease. Probably bacteria enter into the etiology of these cases, but presumably only as a secondary factor. In the acute infectious diarrhea, we have at one time or another a bacteremia; this does not occur in the fermentative group, but there is a marked toxemia due to the absorption of products of intestinal bacterial activity, ordinarily saprophytic—in other words, there is an increased formation of intestinal toxins, produced by a marked reaction of the normal intestinal flora.

The onset of the fermentative type is abrupt, generally associated with a warm wave of high humidity. Fever is present; convulsions may occur and absolute unconsciousness supervene. Generally these infants are extremely toxic, with tongue dry, eyes and fontanelles depressed, dry skin, and vomiting; stools are numerous, green in color and contain mucus, but unless the condition has persisted for some time, pus and blood are absent.

The symptoms of the infectious diarrhea are rather similar to the fermental type. The onset may be sudden with convulsions and high temperature. Generally there is vomiting and profuse diarrhea with consequent rapid dehydration and at times sudden collapse. A condition of acidosis nearly always develops, this is shown by hyperpnea and increased Marriott's coefficient.

The treatment of these cases is particularly difficult and it seems to me requires great judgment and care on the part of the medical attendant. Many of the babies have become rapidly dehydrated and exhausted when seen, in addition to their toxemia. Castor oil is probably the best cathartic to employ, but it must be remembered that when the exhaustion and collapse is evident this may be enough to turn the tide in the wrong direction. It is extremely important to give large amount of water by mouth and rectum if possible; this, however, is difficult, for there is frequent vomiting, and the tenesmus and numerous stools make enteroclysis in many instances unsatisfactory.

Hyperdermoclysis may always be employed, sterile normal salt solution or 5 to 10 per cent. glucose solution. This latter has the advantage of placing fluid in the body, a certain amount of food value and also combats the acidosis. Of the latter it is well to say a few words. Much has been written of this particularly by Howland and Marriott. In diarrheal condition of children, especially those showing hyperpnea, there is evidence of acidosis. This evidence was as follows: (1) Decreased tension of carbon dioxid in the alveolar air; (2) Sellard's test for the reaction of blood serum; (3) altered hemoglobin dissociation curve; (4) increased hydrogen-ion concentration of the blood. According to most men this acidosis is best treated by giving a sufficient amount of sodium bicarbonate.

The administration of sodium bicarbonate in proper quantities is not easy. The infants as a rule cannot retain by mouth or bowel the required amount to affect the acidity of the urine.

To give the alkali subcutaneously requires careful preparation of the solution and the injection of a comparatively large amount. Schloss and Stetson of New York employ and recommend the intravenous route, 75 to 150 c.c. of 4 to 5 per cent. sodium bicarbonate solution. This should be carefully prepared and may be given into any convenient vein or directly into the longitudinal sinus. It may be said that, in an infant suffering from severe diarrhea, the appearance of hyperpnea is almost certain indication of acidosis. Injections of the colon and washing out of the stomach when the little patient is first seen, is at times of value, but if these procedures are followed by shock, they must be dispensed with. A certain number of cases seem to be benefited by astringent injections. Fresh, cool air is of the utmost importance. Sponging the baby at intervals with tepid water helps to decrease toxemia and undoubtedly has a sedative effect.

If we find that the infective organism is of the dysentery group, or at least as near as can be determined we are not dealing with the gas bacillus, a carbohydrate is employed. We therefore, generally begin with 3, 4 or 5 per cent. lactose solution, soon adding barley water. We know that in the presence of utilizable carbohydrate the dysentery bacillus will break down only enough proteid to supply its nitrogen requirement. Milk should be withdrawn for a considerable period of time. It is rarely wise to increase the amount or quality of food, as long as the temperature remains elevated or there is blood in the stools.

The treatment of the fermental type is similar, as far as general measures go, to the strictly infectious, but it is of this kind of illness which is strikingly benefited by treatment in the open air.

Of drugs, I have purposely said but little; internal astringents and antiseptics are not only of little value, but in many instances do harm.

Dr. McFarland, in discussing: We too often blame faulty feeding for the diarrhea of infancy rather than the true cause, namely, infection. During the four warm months of the summer I have been feeding 150 to 200 babies each year for the past ten years. There have been epidemics of diarrhea which could not be attributed to weather and in each instance the examination of the milk has shown a high bacterial count. If the formula is correct no change in it is made but the infant is given calomel, soda and Bulgaria tablets, 5 grains, fourteen to twenty in the twenty-four hours, before and after meals, until the condition is relieved. Nine other physicians doing city work have been following the same treatment. Of the true infectious diarrheas there have been but nine deaths during the past ten years treated at the city stations.

Dr. O. M. Edwards: Of chief importance in infectious diarrhea is prophylaxis. Here in Pittsburgh the ideal food for infants is regarded to be clean, raw milk. It is possible to boil milk to kill bacteria, but we have been told that boiled milk causes scurvy and rickets. I feel that this is not a correct statement and that the burden of proof rests on those that make the charge. If the cow's milk for young babies were boiled there would be fewer cases of infectious diarrhea.

Dr. Billings, in closing: In my experience one can get a larger flora of Bulgaria bacilli by use of lactic acid milk instead of using tablets or tubules. I agree with Dr. Edwards that there is no direct proof that boiled milk causes disturbance of digestion. The curds of raw milk are coarser than in boiled milk.

Spontaneous Hemorrhages in the New-Born. Dr. O. M. Edwards: Numerous classifications have been suggested for the proper grouping of these conditions. As the causal factor or factors, however, in their production is still unknown, a satisfactory etiological classification is impossible. They may be divided into physiological and pathological groups. The only physiological hemorrhage which occurs during the first few days after birth is bleeding from the vagina or uterus. The pathological hemorrhages are composed of cases of melena; umbilical hemorrhages; purpuric hemorrhages; internal hemorrhages and cases of true hemophilia neonatorum. Of these pathological hemorrhages, melena is the one which occurs most frequently. Umbilical hemorrhage is the next most frequent of occurrence. The hemorrhage, which may occur before or after the dropping off of the cord, is usually of an oozing character. Purpuric and subcutaneous hemorrhages are the next most frequent type and may be found extensively distributed over the body, or confined to small areas. Hemophilia neonatorum seldom manifests itself before the end of the first year of life, and must be considered as being extremely infrequent. The possibility of its presence, however, should always be considered.

Many theories have been advanced to account for their occurrence. They were at one time thought to be due to plethora, asphyxia, passive hyperemia and congestion of mesenteric arteries; to a weak condition of the child, difficult labor, hepatic disease, obliteration of the bile duct, difficulty in establishing pulmonary circulation, embolism, etc. Later, the cause was attributed to gastric, mesenteric and duodenal ulcers; congenital heart lesions, patent ductus arteriosus and brain injuries. Later, it was thought that they were caused by infection and by syphilis. Still more recently the immediate cause has been sought for in the blood itself.

The tendency for these hemorrhages of the newly born to continue for a definite period and then stop, suggests the possibility of infection. And it is certain that some, at least, of these hemorrhagic conditions are associated with infection. Whether bacterial infection is the cause of bleeding in those cases, it is impossible to say. In favor of this possibility, it may be said that more hemorrhagic cases are found in hospitals during epidemics of puerperal infection, and also that spontaneous hemorrhages have apparently occurred in epidemic form. The ultimate cause of the hemorrhage must probably be sought for in the blood itself. All these spontaneous hemorrhages have one symptom in common, that is, the inability of the blood to coagulate normally. In short, we must believe at the present time that there are wanting some of the forerunners of thrombin, or that no neutralization of a restricting substance takes place.

Infants in whom these spontaneous hemorrhages occur are usually perfectly normal at birth. The symptoms appear generally during the first few days of life. They are seldom delayed until after the tenth day. Most frequently the hemorrhage appears on the third day. Usually the onset is sudden. Even before the hemorrhage appears the infant may suddenly become restless, crying out and refusing to nurse, while there is a slight rise in temperature. These symptoms may precede the hemorrhage, but usually the hemorrhage is observed first. The restlessness and fever continue during the course of the hemorrhage. The temperature often reaches 103 and 104, and runs an irregular course. When the hemorrhage is severe the temperature is frequently subnormal. The fever may be influenced by the intestinal disturbance which often accompanies these conditions. The child rapidly becomes weak, not only from the loss of blood, but also from insufficient nourishment. The digestion is generally disturbed and diarrhea and vomiting are often present. The pulse is rapid, but soon becomes weak. The child rapidly becomes anemic; paleness may even be the first symptom to be observed. Later, the restlessness changes to apathy and stupor.

The most striking symptoms of this condition, however, are the hemorrhage, which may be either single or multiple. Usually the hemorrhage, which at first is noticed to come from a single part, later springs from any sources. The blood may be vomited or passed in the feces; or bleeding may occur from the umbilicus, the nose, the mouth, the ears, or subcutaneously; or it may be internal.

The spontaneous hemorrhages may be differentiated from hemophilia neonatorum (1) by the fact that hemophilia manifests itself but rarely at this age; (2) by the self-limited character of these spontaneous conditions; (3) by the fact that here the sexes are equally affected; (4) by the negative family history.

The mortality is given by most writers as being between 50 and 70 per cent.

These hemorrhagic conditions run a definite course, and result either in recovery or death. The duration of the disease is brief. In most of the fatal cases the patients die within a week. Those that recover do so within five or six days. The hemorrhages that begin before the fifth day are more fatal than those which begin later. In general, it may be said that the sooner after birth the hemorrhage begins, the more unfavorable is the prognosis.

Many means have been used with varying success to attempt to control these hemorrhages of the newly born. For convenience we may divide them into local and general treatment.

When the bleeding site is visible, local styptics and pressure have been used. In some cases they have had a temporary beneficial effect, but usually they have not been successful. Adrenalin applied locally in this way has probably given the best results. Whole blood or serum has been applied locally and has been injected into the tissues around bleeding surfaces with good effect. Kephalin, a lipoid substance containing phosphorus and nitrogen, found principally in nerve tissues, has been recently advocated by Howell to hasten coagulation. At present it would seem that this substance is going to prove most useful in the local treatment of hemorrhage. When applied locally or injected into the tissues around the bleeding surfaces, it produces a marked effect in checking hemorrhage.

Gelatin, introduced first by Guttman in 1899, has been quite extensively used; given either by mouth or subcutaneously. Some writers report favorable results from its use; more report failures.

Since Wright in 1891 pointed out that calcium chlorid might be beneficial in these conditions by increasing the coagulability of the blood, this drug has been used extensively. At the present time, it is a very common practice to give calcium chlorid or calcium lactate in every hemorrhagic condition. Clinically, the results reported from the use of this drug show its worthlessness in practically all the cases where it has been used.

The treatment of hemorrhagic conditions has attracted renewed interest, due to the investigation of P. Emil Weil. In 1905 he published his first paper on the therapeutic use of sera in hemorrhagic diseases. Since then, serum has been quite extensively used by many men, and many writers have reported beneficial results from the intravenous and subcutaneous administration of serum and the list of cases benefited by its administration is large. Weil and those who have had the greatest experience with the use of serum insist that fresh serum be used. Weil says that the serum should not be over two weeks old, and it is probable that its benefits are even greater if it is not over two days old. No ill effects from the use of serum have been noted. The danger from serum fever and anaphylaxis is slight. Hemolysis of the patient's blood has not been observed. If such a result is feared, the blood can be tested with the serum before its use, and this point determined.

Instead of serum, whole blood is being more generally used and with far greater success. It may be given by direct transfusion, intravenously or subcutaneously. By the use of whole blood we are injecting all the different blood factors and both clinically and experimentally the results are better than with the use of serum, and it can be definitely shown that the coagulation time is shortened. Whole blood has this advantage over serum in that it is more easily obtained and may be applied at once. In ordinary cases, blood may be drawn from the donor and injected into the subcutaneous tissue of the infant. In severe cases it may be administered into the vein.

Transfusion offers an almost ideal treatment for this condition, and should be used in all those cases where it is not only necessary to stop the hemorrhage, but to fill up the circulatory system with blood.

In addition to the curative treatment of the disease, other measures for the care of the patient should be considered. These infants should be kept quiet and warm. On account of the disinclination to nurse, the nutrition must be considered and gavage resorted to unless a proper amount of nourishment is being taken. Hemorrhagic conditions associated with syphilis should receive, in addition, syphilitic treatment.

Dr. F. T. Billings, in discussion: The use of whole blood produces the best results in infants and adults in cases of hemorrhage. In infants it is rather difficult to introduce blood into the vein but rather recently citrated blood has been injected into the longitudinal sinus, entering it at the posterior angle of the anterior fontanel. This is also a good site from which to secure blood for a Wassermann examination.

Dr. T. D. Carroll: I have recently had the stools of newly born infants examined for blood, many of which have shown traces, although there was no reason to suspect that they were in any way suffering from spontaneous hemorrhage. I have had fifteen to twenty of these cases with two deaths. At first I used gelatin with good results, later used serum but now I am using whole blood as it is much easier.

Dr. O. M. Edwards, closing: A convenient way in which to administer whole blood in the treatment of hemorrhage is to fill the syringe with warm saline solution, then place the needle in place in the vein of donor and a needle in subcutaneous tissue of child, expel the salt solution quickly and withdraw 10 c.c. of blood from donor and inject at once into subcutaneous tissue of patient.

COUNTY SOCIETY REPORTS

CARBON—JULY

The Carbon County Society met in the New American Hotel, Mauch Chunk, on July 17, with President Balliet in the chair. The attendance was the largest for over a year and we were glad to shake hands with several of our members who have not met with us for some time. After transacting routine business the members listened to a well-prepared paper by Dr. L. Napoleon Boston of Philadelphia, on "Displacement of the Hollow Viscera of the Abdomen." The various members were greatly interested in Dr. Boston's views on this subject. We hope that the interest in our meetings will increase.

J. B. TWEEDLE, Reporter.

FRANKLIN—JULY

The Franklin County Society met in the Arbitration Room of the Courthouse, July 23, with Dr. John K. Gordon in the chair.

The subject for the discussion was an impromptu symposium on Gonorrhea. Dr. Frank N. Emmert was called and discussed gonorrheal ophthalmia and incidently ophthalmia neonatorum. In the treatment of gonorrheal ophthalmia the patient must be put to bed. No ambulatory case can be successfully treated. Dr. Kempter discussed features of gonorrhea and of the probability of quarantine and registration of venereal diseases. In discussion of proof of positive cure of gonorrhea, he said that such was quite indefinite and the assurance that an individual was free of the disease is about an impossibility. The issuance of certificates of freedom from venereal disease in persons about to be married will present an important responsibility to the medical man. He urged a propaganda among the younger population in regard to venereal danger. He advocated a law making it a misdemeanor for a druggist to prescribe for venereal diseases. The subject was generally discussed.

JOHN J. COFFMAN, Reporter.

LEBANON—AUGUST

The Lebanon County Society convened at Hotel Walton, Lebanon, August 13, at 3 p. m., with eleven members in attendance, President Marshall in the chair and Secretary Strickler in place. Dr. S. P. Heilman was substituted for Dr. Pretz as the society's reporter, the latter having recently entered the U. S. Service.

Dr. E. H. Ginrich addressed the society on "La Grippe," giving the history of six cases treated by him early in the year, in which an appearance early in the cases of a severe form of purpura hemorrhagica was the dominant condition, so severe that four of the patients succumbed before effective treatment could be interposed. The leading clinical aspects in these cases were the usual early showings in grip, followed by labored respiration simulating pneumonia, hemorrhages beginning at the large toe, tongue and throat, and going into general hemorrhages and extreme prostration. In each of these cases there was no history of prior debility, but all were cases of strong men; nor was there any history of a local epidemic, or of any local proximity, or contact, of these cases to account for contagion as a factor. In some, blood escaped through the bowels and the kidneys. In two of them Dr. Riesman of Philadelphia was called in consultation.

In the first cases Dr. Ginrich administered digitalin, Dover's powder, emetin, phenacetin and ergotol. Later he turned to coagulose, and with that saved the two cases, although they were equally severe as to their hemorrhagic features, in one of them there having been a large discharge of blood with the urine.

In discussing, Dr. Rutherford called attention to an article in the May 25, 1918, issue of *The Journal of the American Medical Association,* on "Influenzal Sinus Disease and Its Relation to Epidemic Influenza," in which is advocated careful search of the nasal passages for the influenza bacillus, and the application of cocain and epinephrin, as also in cases of tracheobronchitis for foci of infection leading to involvement of the middle ear, serous membranes, and even the blood stream by means of the *Bacillus influenzae.* This article commends itself as deserving careful study. Dr. Ginrich's presentation of these cases proved a clinical showing of absorbing interest.

The society, subsequent to its adjournment, treated itself to a fine luncheon provided by the Hotel Walton caterer.

S. P. HEILMAN, Reporter.

WARREN—AUGUST

The Warren County Society met at the summer cottage of Dr. Richard B. Stewart, August 19, fourteen members and three guests being present. A new fee bill was adopted. Drs. Schuler and Bradshaw are now on active duty in the Medical Reserve Corps.

Dr. W. Egbert Robertson of Philadelphia gave a short résumé of the treatment of "Infectious Arthritis." In every case of acute articular rheumatism there is some involvement of the heart, but usually no permanent deformity results. The infection may reside about the tonsils or it may be in the intestinal lymphatics, but bacterial therapy has, so far, not been very successful. Dr. Robertson claimed some very excellent results from the use of a 1:200 solution of formalin injected intravenously. About 100 c.c. is used at a dose once a day. After a few doses the active symptoms abate and the endocarditis disappears. The chronic arthritides are likewise due to infections and usually there are many foci of infection. Teeth, tonsils and joints may all act as sources and it is therefore impossible always to remove the foci. The formalin injections are of value in these cases and give good results. Formalin may be used as strong as 3 per cent. intravenously without danger. The treatment was first used years ago in puerperal septicemia.

Dr. Stewart exhibited a man who had been shot in the head some fifteen years ago and recent roentgenograms show several small shot under the cranial bones. The man has considerable dizziness, a staggering gait, and some signs of cerebral irritation. The question of removal of the shot was discussed.

A war-time supper was served by Mrs. Stewart.

M. V. BALL, Reporter.

OFFICIAL TRANSACTIONS

Report of the Secretary

Your secretary has received since the date of the last report, Aug. 31, 1917, $2.75 being the *per capita* assessment of one member for 1916; $217.25, being the *per capita* assessment on seventy-nine members for the calendar year 1917, making a total of 6,917 members for 1917. The number of members paying the *per capita* assessment for the calendar year 1918 up to and including August 27 is 5,879, yielding $16,167.25, and making the total amount received by the secretary, $16,387.25, as against $19,112.50 for the same period last year.

To the 5,879 members, for whom the *per capita* assessment has been paid for 1918, must be added 908 members whose *per capita* assessment has been remitted, giving a total of 6,787 members reported up to Aug. 27, 1918.

One hundred and six members have died during the year as compared with ninety-eight for last year. One member has resigned since paying his 1918 dues. This leaves the actual membership on Aug. 27, 1918, 6,751 as compared with 6,794 on Aug. 31, 1917. There is therefore a loss of forty-three living members as compared with a gain of 208 members for the same period last year. Some ten physicians, however, are reported as having paid, or claimed to have paid their 1918 dues to the county society, but their *per capita* assessment has not been forwarded to this office. As many more who were members in 1917 are now "engaged in the service of the United States or her Allies" but have not been reported as 1918 members with dues remitted. In this connection it should be remembered that a large part of the young physicians receiving their licenses from the Bureau of Medical Education and Licensure this year entered the service without joining the county society, thus depriving the society of its usual annual increment.

The following societies have increased their membership during the twelve months as follows: Luzerne, 8; Northampton and Warren, 6; Clarion, Fayette, Franklin and Lebanon, 5; Erie, 4; Bedford, Bucks, Carbon and Clearfield, 3; Berks, Bradford, Crawford, Elk, Lackawanna and Union, 2; Beaver, Chester, Columbia, Delaware, Greene, Lycoming and Somerset, 1. The following societies have lost in membership as compared with a year ago: Philadelphia, 25; Allegheny, 21; Butler and York, 8; Washington, 6; Center and Dauphin, 5; Cambria, 4; Adams and Tioga, 3; Blair, Cumberland, Indiana, Jefferson, Lancaster, Lehigh, Mercer, Mifflin, Montour, Northumberland, Potter, Susquehanna and Westmoreland, 2; Armstrong, Lawrence, McKean, Monroe, Perry and Wyoming, 1. The following societies have paid for the same number of members as last year: Clinton, Huntingdon, Juniata, Montgomery, Schuylkill, Snyder, Sullivan, Venango and Wayne.

The war has made it harder for the officers of state and county societies to keep their organizations up to par. For instance, fifteen secretaries of the sixty-three county societies have given up their posts to enter the service, thereby crippling the county organization for the time being and greatly increasing the work of the state secretary. Then too, the extra work of various kinds required of those remaining at home has entailed extra labor or lessened efficiency in society work, either or both. The longer the war continues and the more of our members enter the service the more patriotic and energetic must the rest of us become. The interests of our profession and of our country demand that the medical organization shall not be allowed to wane. Each member must be willing to do more and more for his country and profession, but it is the officers, especially secretaries, of state and county societies that must be doubly alert and loyal. While the state society must do all that it can to honor its members who enter the service of our country, it should elect to office only those who may be expected to give the society the needed services.

Soon after the Pittsburgh Session Surgeon-General Gorgas requested the American Medical Association to use its organization down through the state and county societies to urge physicians to apply for commission in the Medical Reserve Corps. The Association promptly asked each state society to appoint a war committee and see that such committee be appointed in each county of the state. The emergency warranted such action, and Lieut. Charles Scott Miller, M. R. C., was named as chairman with your president and secretary as the other members. Later Lieutenant Miller was called to active duty and Dr. Frank C. Hammond, president of the Philadelphia County Medical Society, was selected as his successor. The trustees by a vote taken by mail authorized a small appropriation for the use of the committee. The committee has thought it best to work in conjunction with the state and county committees of the Medical Section of the Council of National Defense, which was already doing good work in the state, largely through the cooperation of the state and county organizations. It is recommended that the House of Delegates authorize the appointment of a War Committee.

There have been seventeen applications for assistance from the Medical Defense Fund during the twelve months, as follows:

Case No. 107. Application dated Sept. 5, 1917. Fractured ankle.

Case No. 108. Application dated Sept. 3, 1917. Fracture of humerus involving elbow joint.

Case No. 109. Application dated Oct. 4, 1917. Fracture of both bones of forearm.

Case No. 110. Application dated Oct. 11, 1917. Abdominal operation.

Case No. 111. Informal application dated Oct. 16, 1917, but never completed.

Case No. 112. Application dated Oct. 13, 1917. Fracture of leg with impacted fracture of upper end of femur. Trial in January, 1918; some members of county society reported to have expressed an opinion on witness stand unfavorable to the defendant physician. Judgment for $2,000. New trial denied. Society counsel waiting for copy of record of trial.

Case No. 113. Application dated Nov. 8, 1917. Typhoid fever with brain complications. Death of child two months after defendant was discharged from case.

Case No. 114. Application dated Jan. 4, 1918. Secondary repair of lacerated perineum.

Case No. 115. Application dated Jan. 30, 1918. Burns from roentgen-ray treatment.

Case No. 116. Application dated Jan. 17, 1918. Infected burn, lower limb.

Case No. 117. Application dated April 16, 1918. Abscess of jaw.

Case No. 118. Application dated March 22, 1918. Sarcoma of thigh.

Case No. 119. Application dated June 3, 1918. Fracture, lower third of radius.

Case No. 120. Application dated June 3, 1918. Confinement.

Case No. 121. Application dated June 2, 1918. Mine injury with general lacerations and contusions.

Case No. 122. Application dated June 25, 1918. Fracture, both bones of forearm.

Case No. 123. Application dated July 19, 1918. Roentgen-ray examination.

The following cases have been disposed of or up in court during the past year:

Case No. 67. Application dated Sept. 19, 1914. Confinement, adherent placenta and later amputation of leg. Came to trial Dec. 3, 1917, and was nonsuited after testimony of plaintiff was submitted.

Case No. 97. Application dated Dec. 3, 1916. Fracture of tibia and fibula. During this summer depositions of three important witnesses about to be called to the army were taken at our request.

Case No. 100. Application dated March 27, 1917. Compound fracture of tibia and fibula. Came to trial Nov. 20, 1917, and nonsuited after plaintiff's side was heard as he had failed to show that nonunion and deformity were fault of doctor's treatment.

Case No. 103. Application dated July 20, 1917. Abdominal operation. Case called in U. S. Court Oct. 18, 1917. Case continued at request of plaintiff.

Case No. 104. Application dated July 29, 1917. "Appendicitis, dying condition on entering hospital. Death two days after operation." Case called Nov. 26, 1917, but plaintiff did not appear and nonsuit was ordered by court.

Case No. 106. Application dated Aug. 31, 1917. Abdominal operation. Came to trial Oct. 29, 1917. Our attorney requested plaintiff to appear at the office of Dr .... or any other reputable medical man to determine the extent and degree of permanent injury. Plaintiff asked for continuance of case till January Court and request was granted. Case was again postponed in January at request of plaintiff and probably it will not come to trial unless pressed by us.

The Pennsylvania Medical Journal for the twelve months ending with September, 1918, will contain nearly one hundred pages of reading matter more than called for by the contract. Copies of The Journal have been mailed monthly to all members in the army or navy whose full military address has been furnished, changing the address as often as necessary. This has necessitated an extra number of journals each month in order to supply duplicates, and has also necessitated extra postage each month for copies going out of the country. The cost of publication has gradually increased and will probably continue to increase. Beginning with July, 1918, there was an increase of 13 per cent. in the cost of journal postage. The increase of letter postage from 2 to 3 cents, which went into effect in November, 1917, has also increased the expenses of The Journal. It also accounts for the increased expenses for postage in the secretary's office.

Respectfully submitted,
C. L. Stevens, Secretary.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Report of the Treasurer, Dr. G. W. Wagoner

RECEIPTS

1917		
Sept. 5,	to cash balance on hand	$ 7,697.93
Oct. 5,	to cash, received from C. L. Stevens, Sec...	9.00
Oct. 5,	to cash, received from C. L. Stevens, Sec...	3 50
Nov. 2,	to cash, received from C. L. Stevens, Sec...	110.00
Nov. 26,	to cash, received from C. L. Stevens, Sec...	165.00
Nov. 26,	to cash, received from C. L. Stevens, Sec...	68.75
Nov. 26,	to cash, received from C. L. Stevens, Sec...	5.00
1918		
Jan. 5,	to cash, received from C. L. Stevens, Sec...	406.00
Jan. 19,	to cash, received from C. L. Stevens, Sec...	850.75
Jan. 26,	to cash, received from C. L. Stevens, Sec...	415.25
Jan. 26,	to cash, received from C. L. Stevens, Sec...	27.50
Feb. 21,	to cash, received from C. L. Stevens, Sec...	970.75
Mar. 11,	to cash, received from C. L. Stevens, Sec...	1,545.50
Mar. 11,	to cash, received from C. L. Stevens, Sec...	1.00
Mar. 22,	to cash, received from C. L. Stevens, Sec...	1,960.75
Apr. 5,	to cash, received from C. L. Stevens, Sec...	2,439.25
Apr. 23,	to cash, received from C. L. Stevens, Sec...	5,309.25
May 31,	to cash, received from C. L. Stevens, Sec...	1,634.50
May 31,	to cash, received from C. L. Stevens, Sec...	8.25
June 20,	to cash, received from C. L. Stevens, Sec...	192.50
Aug. 16,	to cash, received from C. L. Stevens, Sec...	181.50
Aug. 24,	to cash, received from C. L. Stevens, Sec...	5.50
Aug. 24,	to cash, received from C. L. Stevens, Sec...	2.00
Aug. 24,	to cash, received from C. L. Stevens, Sec...	1.50
Aug. 27,	to cash, received from C. L. Stevens, Sec...	2.75
Aug. 27,	to cash, received from C. L. Stevens, Sec...	2.75
Aug. 27,	to cash, received from C. L. Stevens, Sec...	11.00
Aug. 27,	to cash, received from C. L. Stevens, Sec...	16.50
Aug. 27,	to cash, received from C. L. Stevens, Sec...	60.50
Aug. 30,	to cash, received from C. L. Stevens, Sec...	2.75
Aug. 31,	to cash, received from Medical Benevolence Fund in payment of Orders Nos. 83 and 84, drawn from General Fund	573.53
Aug. 31,	to cash, received from Medical Defense Fund, in payment of Orders Nos. 1, 25, 27, 28, 29, 51, 67, 68, 71 and 74, drawn from General Fund	1,019.35
	Total receipts	$25,700.06

EXPENDITURES

Order No.	1917	
1.	Oct. 8, by cash, Wm. Kerper Stevens, Medical Defense Fund No. 104	$ 50.00
2.	Oct. 8, by cash, I. J. Moyer, Committee on Scientific Work	23.68
3.	Oct. 8, by cash, American Med. Assn., programs and reports	69.10
4.	Oct. 8, by cash, Harry D. Jump, Committee on Scientific Work	4.50
5.	Oct. 8, by cash, American Surety Co., bonds of Secretary and Treasurer	15.00
6.	Oct. 8, by cash, Fort Pitt Hotel Co., Secretaries' Conference	25.00
7.	Oct. 8, by cash, Donald Guthrie, Committee on Scientific Work	18.25
8.	Oct. 8, by cash, Main, Squires & Co., auditing books and records	42.50
9.	Oct. 8, by cash, John C. Ingham, retainer fee...	100.00
10.	Oct. 8, by cash, C. L. Stevens, Transactions, October	579.92
11.	Oct. 24, by cash, G. W. Wagoner, Endowment Fund	300.00
12.	Oct. 31, by cash, Eugene R. Whitman, Committee on Scientific Work	27.95
13.	Oct. 31, by cash, Weber, ivory gavel	25.00
14.	Oct. 31, by cash, C. L. Stevens, expenses Pittsburgh Session	47.50
15.	Oct. 31, by cash, C. L. Stevens, Transactions, November	579.92
16.	Nov. 6, by cash, General Shorthand Reporting Company, reporting at Pittsburgh	201.48
17.	Nov. 6, by cash, L. C. Alexander, reporting at Pittsburgh	100.00
18.	Nov. 17, by cash, Mrs. M. C. Repp, reporting at Pittsburgh	125,00
19.	Nov. 22, by cash, C. L. Stevens, Transactions, December	579.92
20.	Nov. 22, by cash, Wm. H. Cameron, salary as Manager	62.50
21.	Nov. 22, by cash, G. W. Wagoner, salary as Treasurer	50.00
22.	Nov. 22, by cash, C. L. Stevens, salary as Secretary	375.00
23.	Dec. 26, by cash, Wm. G. Jordan, printing and stationery	81.25
24.	Dec. 26, by cash, F. H. Smith, P. M., stamped envelopes	32.15
	1918.	
25.	Jan. 5, by cash, J. E. Ogle, Jr., Medical Defense Case No. 67	100.00
26.	Jan. 5, by cash, C. L. Stevens, Transactions, January	579.92
27.	Jan. 14, by cash, Snyder, Zieber and Snyder. Medical Defense Case No. 110	10.00
28.	Jan. 18, by cash, Edw. A. Shumway, Medical Defense Fund, Philadelphia Society	3.75
29.	Jan. 18, by cash, W. K. Stevens, Medical Defense Case No. 104	100.00
30.	Jan. 24, by cash, The Rittenhouse, Committee on Scientific Work	35.00
31.	Jan. 24, by cash, The Rittenhouse, Committee on Public Policy and Legislation	21.00
32.	Jan. 24, by cash, G. W. Wagoner, Endowment Fund	300.00
33.	Feb. 8, by cash, Oscar Klotz, Committee on Scientific Work	27.56
34.	Feb. 8, by cash, C. L. Stevens, Transactions, February	579.92
35.	Feb. 18, by cash, Newtown New Century Club, Commission on Cancer	10.00
36.	Feb. 18, by cash, I. J. Moyer, Committee on Scientific Work	23.30
37.	Feb. 21, by cash, N. B. Neilson, District Censor Expenses	4.40
38.	Feb. 23, by cash, P. J. Eaton, Committee on Scientific Work	23.77
39.	Mar. 5, by cash, Adolph Krebs, Committee on Scientific Work	17.86
40.	Mar. 5, hy cash, Henry Hardenbergh, Expenses of J. W. Luther, District Censor	7.47
41.	Mar. 5, by cash, C. L. Stevens, salary as Secretary	375.00
42.	Mar. 5, by cash, W. H. Cameron, salary as Manager	62.50
43.	Mar. 5, by cash, G. W. Wagoner, salary as Treasurer	50.00
44.	Mar. 5, by cash, C. L. Stevens, Transactions, March	579.92

45. Mar. 19, by cash, W. G. Jordan, printting and stationery	24.50
46. Mar. 19, by cash, John C. Ingham, Appeal to Censors, 18th District	34.70
47. Apr. 19, by cash, C. L. Stevens, Transactions, April	579.92
48. Apr. 19, by cash, G. W. Wagoner, Endowment Fund	300.00
49. May 20, by cash, Oscar Klotz, Committee on Scientific Work	3.00
50. May 20, by cash, W. G. Jordan, printing and stationery	27.00
51. May 20, by cash, G. W. Lerch, Medical Defense Case No. 97	16.35
52. May 20, by cash, American Med. Assn., reprints	13.50
53. May 20, by cash, C. L. Stevens, Transactions, May	579.92
54. May 20, by cash, Walter Thomas, organization work, on account	15.00
55. June 4, by cash, C. L. Stevens, Committee on Public Policy and Legislation	23.20
56. June 4, by cash, George A. Knowles, Committee on Scientific Work	26.29
57. June 4, by cash, F. H. Smith, P. M., stamped envelopes	15.80
58. June 4, by cash, C. B. Longenecker, Committee on Scientific Work	26.39
59. June 4, by cash, G. W. Wagoner, salary as Treasurer	50.00
60. June 4, by cash, W. H. Cameron, salary as Manager	62.50
61. June 4, by cash, C. L. Stevens, salary as Secretary	375.00
62. June 4, by cash, C. L. Stevens, Transactions, June	579.92
63. June 21, by cash, G. W. Wagoner, Endowment Fund	300.00
64. June 22, by cash, C. L. Stevens, Committee on Scientific Work	27.47
65. June 22, by cash, Wm. N. Bradley, Committee on Scientific Work	22.74
66. July 11, by cash, Harold Miller, Committee on Scientific Work	36.00
67. July 11, by cash, Burleigh and Challener, Medical Defense Cases 119-122	50.00
68. July 15, by cash, E. M. Pennell, Medical Defense Case No. 100	250.00
69. July 23, by cash, F. H. Smith, P. M., stamped envelopes	48.03
70. July 25, by cash, C. L. Stevens, Transactions, July	579.92
71. July 25, by cash, Edw. A. Shumway, Medical Defense Fund, Philadelphia Society	425.00
72. July 25, by cash, Walter F. Donaldson, traveling expenses	29.09
73. Aug. 1, by cash, Chas. Scott Miller, War Committee	24.33
74. Aug. 19, by cash, G. W. Lerch, Medical Defense Case No. 97	14.25
75. Aug. 19, by cash, W. G. Jordan, printing and stationery	10.50
76. Aug. 19, by cash, H. W. Gass, Councilor expenses	4.00
77. Aug. 19, by cash, C. L. Stevens, Transactions, August	579.92
78. Aug. 19, by cash, G. W. Wagoner, salary as Treasurer	50.00
79. Aug. 19, by cash, Wm. H. Cameron, salary as Manager	62.50
80. Aug. 19, by cash, C. L. Stevens, salary as Secretary	375.00
81. Aug. 26, by cash, C. L. Stevens, postage, expressage, etc.	87.25
82. Aug. 26, by cash, Donald Guthrie, Councilor expenses	9.00
83. Aug. 29, by cash, Edw. B. Heckel, interest, Medical Benevolence Fund	373.53
84. Aug. 29, by cash, G. W. Wagoner, for Medical Benevolence Fund	200.00
85. Aug. 31, by cash, C. L. Stevens, Transactions, September	579.92
86. Aug. 31, by cash, G. W. Wagoner, Medical Benevolence Fund for Investment	595.90
87. Aug. 31, by cash, G. W. Wagoner, Medical Defense Fund for Investment	4,469.25
Total expenditures, General Fund	$18,383.58

CLASSIFIED STATEMENT OF RECEIPTS

Sept. 1, 1917, to Sept. 1, 1918

GENERAL FUND

Cash on hand Sept. 1, 1917		$ 7,697 93
Received from 5,959 members, dues	16,387.25	
Received from organization work	22.00	
Received from Medical Benevolence Fund in payment of orders issued against said fund	573.53	
Received from Medical Defense Fund in payment of orders issued against said fund	1,019.35	
Total		$25,700.06

MEDICAL BENEVOLENCE FUND

Cash on hand Sept. 1, 1917	$ 3,593.78	
Received interest on deposit	126.03	
Received interest on investment	247.50	
Received from per capita tax on 5,959 members @ 10 cents	595.90	
Received loan from General Fund for Liberty Bond investment	200.00	
Total		$ 4,763.21

MEDICAL DEFENSE FUND

Cash on hand Sept. 1. 1917	$ 3,731.99	
Received interest on deposit	101.81	
Received interest on investment	67.50	
Received from per capita tax on 5,959 members @ 75 cents	4,469.25	
Total		$ 8,370.55

ENDOWMENT FUND

Received interest on Liberty Bond investment	$ 189.55	
Received interest on deposit	.78	
Total		$ 190.33
Total receipts		$39,024.15

SUMMARY STATEMENTS OF CASH BALANCES, RECEIPTS AND DISBURSEMENTS

Sept. 1, 1917, to Sept. 1, 1918

	Total	General Fund	Medical Benevolence Fund	Medical Defense Fund	Endowment Fund
Cash Balance, Sept. 1, 1917	$15,023.70	$ 7,697.93	$3,593.78	$3,731.99	
Receipts:					
Dues, various counties, 5,959 members	16,387.25	16,387.25			
Membership per capita tax	5,065.15		595.90	4,469.25	
Interest on investments	504.55		247.50	67.50	$189.55
Interest on bank balances	228.62		126.03	101.81	.78
Borrowed for investment of Liberty Bonds	200.00		200.00		
Organization work	22.00	22.00			
Total receipts, Sept. 1, 1917, to Sept. 1, 1918	$22,407.57	$16,409.25	$1,169.43	$4,638.56	$190.33
Total receipts, including balance Sept. 1, 1917	$37,431.27	$24,107.18	$4,763.21	$8,370.55	$190.33
Transfers of funds		1,592.88†	573.53*	1,019.35*	
Total balances and receipts	$37,431.27	$25,700.06	$4,189.68	$7,351.20	$190.33
Disbursements:					
General and special funds	22,452.92	18,383.58	4,069.34		
Balances, Sept. 1, 1918	$14,978.35	$ 7,316.48	$ 120.34	$7,351.20	$190.33

* Transferred from. † Transferred to.

CLASSIFIED STATEMENT OF DISBURSEMENTS

Sept. 1, 1917, to Sept. 1, 1918

GENERAL FUND

Medical Defense Fund for investment	$ 4,469.25	
Medical Defense Fund, on account	1,019.35	
Medical Benevolence Fund for investment	595.90	
Medical Benevolence Fund, on account	573.53	
Endowment Fund	1,200.00	
Expense, bond of Secretary and Treasurer	15.00	
Expense, Pittsburgh Session	610.58	
Expenses, Committee on Scientific Work	343.76	
Expenses, Committee on Public Policy and Legislation	44.20	
Expenses, Committee on Cancer	10.00	
Expenses, District Censors	88.66	
Expenses, War Committee	24.33	
Expenses, organization work	15.00	
Expenses, publishing JOURNAL	6,959.04	
Salary of Manager	250.00	
Salary of Secretary	1,500.00	
Salary of Treasurer	200.00	
Retainer fee	100.00	
Purchase of gavel	25.00	
Printing, postage and stationery	339.98	
Total		$18,383.58

SPECIAL FUNDS

Medical Benevolence Fund: Purchase of Third Liberty Loan Bonds, par value, $4,200.00	$ 4,069.34
Total disbursements	$22,452.92

STATEMENT OF CASH BALANCES AND INVESTMENTS

Sept. 1, 1918

CASH

General Fund	$ 7,316.48	
Medical Benevolence Fund	120.34	
Medical Defense Fund	7,351.20	
Endowment Fund	190.33	
Total		$14,978.35

MEDICAL BENEVOLENCE FUND

P. R. R. General Freight Equipment Trust Certificates, Nos. 531, 532, 533, 534 and 535, Series 1, par value $1,000,00, 4½ per cent.	$ 5,000.00	
Wilkes-Barre City Improvement Bond, No. 94, Series 1, par value $1,000.00, 4½ per cent.	1,000.00	
Liberty Bonds, third issue	4,200.00	
Total		$10,200.00

MEDICAL DEFENSE FUND

Wilkes-Barre City Improvement Bonds, Nos. 96, 97 and 98, Series 1, par value $1,000.00, 4½ per cent.		$ 3,000.00

ENDOWMENT FUND

100 shares Peoples' Building and Loan Association, real value $2,234.00, 21 installments paid	2,100.00	
Liberty Bonds, first issue	5,000.00	
Total		$ 7,100.00
Total cash balances and investments, Sept. 1, 1918		$35,278.35

Johnstown, Pa., Aug. 31, 1918.

G. W. Wagoner, Treasurer.

Reports of Individual Councilors

DR. IRA G. SHOEMAKER, READING, COUNCILOR FOR THE FIRST DISTRICT

To the President and House of Delegates:

Owing to conditions over which I had no control, it was impossible to visit the different societies in my district. I have, however, communicated with the secretaries and received a report from each one. These reports show each society, despite the drain put on it by war conditions, to be in splendid order, a nice increase in membership, a better attendance at the meetings and a more hearty cooperation to make the meetings successful.

Outside Berks County there has been no request for defense in alleged malpractice. In one of our cases a nonsuit was ordered because the prosecution was unable to secure sufficient evidence to warrant a trial. One threatened suit has not materialized, probably because of prompt action on our part. We have one suit on our hands which has been heard before three masters, asked for by the prosecution. At this hearing they were not able to "make out" a very strong case and we doubt whether they will go any further with it.

Efforts are being made by the different societies whereby the practice of those who have entered the army shall be taken care of during their absence. Up to this time nothing very practical has come out of any plan; whether the fault lies in the laity or the profession we cannot say. This is a matter, we believe, which must be worked out according to the needs of each community.

DR. HARRY W. ALBERTSON, SCRANTON, COUNCILOR FOR THE THIRD DISTRICT

To the President and House of Delegates:

Nothwithstanding the fact that many of the active members of the respective county societies comprising the Third District have entered the service of the country, organized medical enthusiasm among those remaining keeps well apace with the crying need.

I have found it impossible to visit all the societies comprising this district during the past year but have been officially informed of the work done by each and am pleased to note that it is progressive in character.

I am glad to report that but three suits for malpractice are now pending in this district, all of which are typically of the black-mail type. In two of the three suits I am advised by the attorneys for the defense that the case will in all probability be dropped, as the prosecution has failed in recent terms of court to put in an appearance or petition for a continuance, and they probably feel the pressure of public opinion. and a well-organized state medical society defense fund.

All in all, the past year has been a very creditable one for the State Society in this district, and although we have given our first and greatest effort to the trying needs of our country, which I am sure is true of medical men everywhere, the affairs of the State Society have been in no wise neglected and we are pleased to note that things generally in this district are in a satisfactory condition.

DR. HORATIO W. GASS, SUNBURY, COUNCILOR FOR THE FOURTH DISTRICT

To the President and House of Delegates:

The Fourth Councilor District is pursuing its usual course. The war interest seems paramount to the society interest; therefore, the society work has been considerably neglected. We have endeavored to solicit the interest of the remaining physicians to keep the home fires burning. The report will show nine new members, seven deaths and nine suspensions. Of the eight counties in our district six hold monthly meetings, one bi-monthly and one quarterly. This district, during the past year, has held sixty-five meetings with an average attendance of ten, which is equivalent to 650 members at one meeting.

We have no alleged malpractice suits on hand at the present time.

Many special meetings have been held throughout the district, relative to enlistment of physicians and other measures vital to the present situation. This district has now had sixty-eight physicians examined, fifty-three accepted and thirty-nine in the service. The division of fees to those at home is not meeting with very hearty response, owing to the many misunderstandings and especially as to the question of whose patient it is.

We submit the following statistical report:

Membership, July 1, 1917	240
Membership, July 1, 1918	231
Number of physicians in district	306
New members received	9
Members died	7
Members suspended	9
Total number of meetings during year	65
Average attendance	10
Number of physicians examined for M. R. C.	68
Number accepted	53
Number now in service	39

DR. SPENCER M. FREE, DU BOIS, COUNCILOR FOR THE FIFTH DISTRICT

To the President and House of Delegates:

The condition of the societies in the Fifth Councilor District is excellent for these strenuous times. The membership for the district is 634, the same as for last year, notwithstanding the fact that twenty-three members were dropped for nonpayment of dues. The average attendance at the meetings has been higher than during 1917.

There are in the United States Service 165 physicians from the district as follows: Bedford, 8; Blair, 16; Cambria, 25; Center, 5; Clearfield, 13; Fayette, 41; Somerset, 7; Westmoreland, 50. Several members have applied for service who have not yet been commissioned.

Clearfield County Society remitted the annual dues of its members in the service, but paid the *per capita* assessment to the state society. It is learned that the societies of Indiana and Jefferson counties, which are adjacent to Clearfield, but in the Ninth Councilor District, also paid the state society the *per capita* assessment. This is highly commendable and should be done by all the county societies.

There were four suits for alleged malpractice in the district during the past year. Two were ended by the defeat of the prosecutor; two have not come to trial. They are well defended by the attorneys of the society and will probably have the same ending if they come to trial.

DR. IRWIN J. MOYER, PITTSBURGH, COUNCILOR FOR THE SEVENTH DISTRICT

To the President and House of Delegates:

The councilor of the Seventh District wishes to report progress. War conditions have modified the line of medical work. Everyone is seeking to save time. Owing to the number of absentees all effort is toward doing just what is immediately essential and studying conditions produced by the war. The number of physicians in the district enlisted in the Medical Reserve Corps of the Army is fair, but in some of the counties is not what it should be. From the Military Medical Honor Roll published in *The Journal of the American Medical Association*, June 1, 1918, I have compiled the following statement: Total number of physicians (male) in the district 2,214. Number enrolled in the service 445, or 20 per cent. of the total.

	Number Physicians	In Service	Per Cent.
Allegheny County	1,660	375	22.6
Beaver County	115	13	11 +
Greene County	42	2	4 +
Mercer County	99	16	16 +
Lawrence County	92	14	15 +
Washington County	206	25	12 +
Total in district	2,214	445	20 +

The secretary of one of these county societies writes: "We have several young men without families who will not join the M R. C., and the older men do not feel like joining when these are not in service, all of which cuts the percentage."

The only county medical societies visited during the year were Allegheny and Greene.

June 11, 1918, the Greene County Medical Society, meeting at Waynesburg, was visited. The greeting was very cordial. The chief topic of the evening was war; this war of might against right; this war of autocracy against democracy; this war against principles vital to all people; the opportunities, obligations and responsibilities of the medical profession in this war. There is no neutral ground; all must do their utmost, then we will not fail.

Some few matters relating more directly to the profession may be worthy of note. The desire to obtain professional knowledge and skill in the highest degree should be the aim of every member of the profession. Coupled with these there should be the highest type of character and personality Some little thought should be devoted to the business phase of the profession. Members of the medical profession are usually so much engaged in looking after the difficulties of others that they neglect their own needs. Medical men are often indifferent about matters of business pertaining to both themselves and their profession. Their habit of action becomes then directly opposite from "business concerns," because the latter look first, last and all the time to their own interests.

The subject of defense brings up many questions. Recently two questions under this subject have come under observation. The treatment of infections has so far advanced that the laity are beginning to think that a physician who does not prevent infection is negligent in his duty. Again, roentgen rays have become very popular in the diagnosis of fractures and the laity, having no conception of the interpretation of roentgen-ray pictures, attribute irregularities to negligence in the physician's treatment. This latter view is often augmented by the fact that, under the Workmen's Compensation Laws, suit is impracticable against anyone in relation to an injury, except against the medical man in attendance. Questions of such character as these coming up to the courts, demand immediate attention, and it is the business of the profession to see that the public is properly instructed on limitations in medical practice.

During the year, seven applications for defense in alleged malpractice suits have been filed and the application for each approved.

DR. JAMES JOHNSTON, BRADFORD, COUNCILOR FOR THE EIGHTH DISTRICT

To the President and House of Delegates:

The councilor from the Eighth District has nothing that is novel or startling to present. The six county societies meet more or less regularly with average attendance. Routine scientific and other business has been carried out as has been customary in other years. Topics of the day, such as workmen's compensation, health insurance, and education of cripples have been discussed without any result in the way of action or agreement such as could be brought to the attention of this body.

I have no malpractice cases to report or to explain. I have acted in only two alleged malpractice cases during six years. Neither of these came to trial, and only one occasioned any expense to the state society.

In the northwest corner of Pennsylvania the medical profession is doing its full share of war work in all of its various forms for the success of our army and for the security of our political ideals, and if we happen to be farthest from Philadelphia and have a comparatively small representation at this meeting we are nevertheless loyal and interested members of this great state society.

DR. JAY B. F. WYANT, KITTANNING, COUNCILOR FOR THE NINTH DISTRICT

To the President and House of Delegates:

The county medical societies making up the Ninth District are all in good working condition. The councilor of this district is sorry to report that he did not visit all the societies but learns with pleasure that the usual working forces in the various societies have the work well in hand. A general canvass has been made to get every eligible man into the ranks; each of the counties has a few who are not members.

Some of our most active men are now in the service for universal democracy and are very much missed in the monthly meetings. They are willing to offer their services and even their lives for the principles on which our beloved country is founded; "for greater love hath no man than that he give up his life for his friends." About forty of our companions have gone into active service; some at home and some overseas, and as they work in the front lines let all of us who are behind the lines do our best to aid in winning a victory—such a victory that will forever blot out autocracy. The medical profession in this district has pledged itself to the service of the Defense League and stands in readiness to answer any call that may come.

Our great aim for 1919 is to have every eligible physician a member of the county society.

Report of the Committee on Public Policy and Legislation

To the President and House of Delegates:

As I am leaving the country soon for foreign service, I am asking Dr. G. A. Knowles, secretary of the committee, to forward the minutes of the only meeting the committee has held and at which at least one member of each subsidiary committee was present and participated.

W. M. L. Coplin, Chairman.

MINUTES OF THE COMMITTEE ON PUBLIC POLICY AND LEGISLATION

Philadelphia, Jan. 12, 1918.

The Committee on Public Policy and Legislation held a meeting at the Rittenhouse Hotel and was called to order by the chairman, Major W. M. L. Coplin, at 10:45 a. m.

There were present Drs. W. M. L. Coplin, F. L. Van Sickle, Owen Copp, E. A. Shumway, John B. Carrell, John M. Baldy, C. L. Stevens, William D. Robinson, C. A. E. Codman, E. M. Green and G. A. Knowles. Dr. Knowles was made secretary.

The committee sent a message of good will to President Dixon who was ill at the University Hospital.

Dr. J. B. McAlister who had been invited to be present wired his inability to be present on account of train service. Matters of legislation were very fully discussed by Major Codman.

On motion of Dr. Stevens, seconded by Dr. Copp, the chairman of the committee on public policy and legislation of each county society was requested to act as an associate member of the Committee on Public Policy and Legislation.

On motion of Dr. Baldy, seconded by Dr. Van Sickle, it was recommended that the above plan be incorporated in the By-Laws of the Society and that this action be transmitted to the Committee on Revision of By-Laws.

On motion of Dr. Baldy, seconded by Dr. Green, it was recommended that an office of Executive Secretary of the State Society be created. On motion of Dr. Baldy, seconded by Dr. Robinson, the Committee on Revision of By-Laws was requested to outline the duties of the Executive Secretary.

On motion of Major Codman, seconded by Dr. Baldy, it was recommended that the annual per capita assessment of the State Society be increased by one dollar and as much of the increased income as may be necessary be devoted to the salary and expenses of the Executive Secretary.

On motion of Major Codman, seconded by Dr. Robinson, the Chair was authorized to appoint a committee of three to transmit the above items of business to the Committee on Revision of By-Laws and make all explanations necessary. The Chair appointed Drs. Codman, Robinson and Baldy.

It was suggested by Major Codman that the Committee on Public Policy and Legislation formulate policies for the State Society.

On motion of Dr. Van Sickle the Advisory Committee of the Committee on Public Policy and Legislation was authorized to perform the duties of organizing the county society committees on public policy and legislation for the purpose of collecting evidence of illegal practice of the healing art as provided for by Dr. Baldy's resolution introduced in the House of Delegates at Pittsburgh, and report to the Committee on Public Policy and Legislation at such time and place as may be necessary.

On motion of Dr. Van Sickle, seconded by Dr. Baldy, a sub-committee of three was authorized to confer with the Commission for Study of Industrial Insurance authorized by the last legislature. The Chair appointed as this committee Drs. Carrell, Van Sickle and Green.

On motion of Dr. Stevens it was decided that the committee should continue to cooperate with the Legislative Conference of the Medical Profession of Pennsylvania which was organized during the last legislature.

Dr. Stevens presented a message from Dr. Dixon in response to the one sent him, and the meeting adjourned at 1 p. m.

G. A. Knowles, Secretary.

Report of the Committee on Promotion of Efficient Laws on Insanity

(Subsidiary to the Committee on Public Policy and Legislation.)

To the President and House of Delegates:

The Committee on Promotion of Efficient Laws on Insanity desires to report that in the year intervening between legislative assemblies there has been little to engage its attention. It has incurred no expense during the year to be charged to the Society. The committee feels that its continuance during the coming legislative session will be justified by its experience two years ago, and that it has an important function in supporting legislation which it can approve, and in criticizing measures which, however well intended, may not always be consistent with the best development of the care of the insane.

Respectfully submitted,
H. W. Mitchell, Chairman.

Report of the Commission on Conservation of Vision

(Subsidiary to the Committee on Public Policy and Legislation)

To the President and House of Delegates:

The Commission on Conservation of Vision desires to be continued. Although little actual work has been done through the year, we have acted in an advisory capacity with the Department of Labor on several occasions; indeed, the commission has been appointed an advisory board to that organization. We desire, therefore, to be continued by the House of Delegates. As far as I know now, we will have no expenses which we cannot take care of ourselves.

William Campbell Posey, Chairman.

Report of the Commission on Medical Expert Testimony

(Subsidiary to the Committee on Public Policy and Legislation)

To the President and House of Delegates:

Your Commission on Medical Expert Testimony respectfully reports that owing to the necessity for conservation of the society's funds, no meeting of the commission was called during the past year. Much influence has been brought to bear toward having the Pennsylvania State Bar Association appoint a like commission to meet our commission and frame a law which will do away with present juggling of physicians on the witness stand, but no such commission has been appointed.

Your commission feels that the legal profession not only will not assist but will obstruct any legislation that will change present status, and that little can be accomplished until the society has a representative to attend to and properly present legislation which your commission or commissions may desire. A meeting of this commission has been called for September 24, at the Bellevue-Stratford Hotel, Philadelphia.

Respectfully submitted,
Joseph E. Willetts, Chairman.
David N. Dennis.
John B. Carrell.

Report of the Committee on Health and Public Instruction

To the President and House of Delegates:

There has been no work suggested for this committee during this year and for that reason no meeting of the committee has been held.

Charles H. Miner, Chairman.

Report of the Commission on Cancer

(Subsidiary to the Committee on Health and Public Instruction.)

To the President and House of Delegates:

Owing to war conditions no meeting of the committee has been held, no work has been done and no money has been spent.

Owing to the broken up condition of the medical profession and more especially owing to the difficulty of obtaining the attention of the public at the present time we believe that this particular work should be discontinued until after the war.

We would suggest that the nominal organization of the committee be retained with the understanding that active work be resumed only after the war.

Respectfully submitted,
J. M. Wainwright, Chairman.

Report of the Committee on Archives

To the President and House of Delegates:

On account of war work the Committee on Archives of the Medical Society of the State of Pennsylvania has no report to make for this year.

Albert M. Eaton, Chairman.

The environment of advertising counts for much. The Pennsylvania Medical Journal has the same high standards for its advertising as for its news and editorial departments. Our readers may rely on our advertisers.

This Journal declines advertising that, if accepted, would lower its standards. This justifies readers in giving the accepted advertisers their confidence and patronage.

We place the quality of our advertising pages above advertising revenue. But it pays our readers because they know our columns are trustworthy.

MOVING TO THE CITY IN WARTIME

Enlistment of doctors from rural districts was very common when the first call came for Medical Reserve officers, many small places losing so many that there is now a positive shortage of physicians in many districts. And a reduced proportion came from the large cities, which have long been overcrowded and could spare from one third to one half of their medical personnel. Smaller cities could readily spare one third.

A most distressing phase of the situation has developed, however, for many of the places vacated by city men have been promptly taken by men moving in from small towns and from the country. This has become so prevalent in some places that it is a veritable scramble to see who can grab in first, but in other places it is less prevalent.

Now, in the present drive for medical officers, the Surgeon-General wants by far the larger proportion taken from the cities, for he realizes that the rural districts actually need practically all the men they have.

It is the patriotic duty of physicians established in rural and small-town practices and not taken for military service to remain where they are; they are seriously needed there. They are not needed in the cities, and very few of them will succeed in establishing stable city practices. We have information concerning a number of men who took advantage of the situation and rushed right off to cities, expecting to better their positions in practice. Almost without exception they have been disappointed, and some of them are looked upon as slackers, both by the profession and by the public.

And now, with the intensive drive for medical men centering in the cities, there is a growing feeling that the government should take at once the men who moved in and are not yet established. Certainly this would be a wise solution of the problem, for unless something is done to stop the rush to the cities the rural districts will be in a desperate situation for medical care.

Doctor, don't be tempted to do anything so foolish as to drop your rural or small-town practice in order to establish yourself in a city in this crisis. Such a move is neither patriotic nor sensible; from a financial viewpoint it is a gamble. We wish we could impress on some rural men who are doing better than the average city doctor ever did or will do, that a move to the city is "jumping from the frying pan into the fire."—*Medical Council.*

COMFORT STATIONS

Public accommodation is being met by some large cities in different ways. In the East, a number of the cities have constructed stations at expenditures varying from $6,000 to $18,000. The more expensive stations include news and bootblack stands, with a view of making them self-supporting. Other cities have used an idea suggested by the International Public Comfort Station Association: That of various merchants in the city displaying a neat, little sign, designated by the city, which shows or indicates that within there is a comfort station for the accommodation of either men or women, or both. This system, so far, seems to have met with success. It saves the city a heavy expenditure for new buildings, and also benefits the merchant by material increase in business. It has been suggested that stations be located at the junction points of some of our automobile roads where traffic is very heavy, and that a sufficient amount of ground be reserved for future growth.—Bulletin, Los Angeles Health Department.

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